AMERICAN

JOURNAL OF MINING,

Milling, Oil Boring, Geology, Mineralogy, Metallurgy, etc.

GEORGE FRANCIS DAWSON, EDITOR.

PARK BUILDING.

VOLUME II.—OCTOBER, 1866, TO MARCH, 1867.

NEW YORK:

WESTERN & COMPANY, PUBLISHERS AND PROPRIETORS,

37 PARK ROW AND 145 NASSAU STREET.

11.751

620.5
fE574
v.2

INDEX TO VOLUME II.

Editorials.

A.

A Good Appointment, 105; Alkali, The Manufacture of, 105; An "Unappreciated" District, 24; A Step in the Right Direction, 249; A Fine Opportunity, 216; A Wonderful Montana "Wild Cat" in Philadelphia, 408.

B.

Bache, Death of Prof., 344; British Colliery Explosion, The Late Appalling, 184; British Query Answered, A, 56.

C.

Coal Exchange for New York, 8; Mines of Michigan, 41; New Exchange, 249; Duties, The Proposed Change in the Tariff, and How it will Operate, 264; Area of the United States, 280; The Duty on Foreign, 297; The Coal Question, Big Cry and Little Wool, 104; Alleged Bribery of Congressmen by Nova Scotia Miners, 265; Compulsory Strike System, 72; Compliments of the Season, 200; Change, Finance, Mining and other matters, 248; Comstock, More about the Great Adit, 200; Copper, A Warning, Dangerous Legislation Against the Interest, 297.

E.

Exposition, The Paris, More Brains Wanted on the Commission, 344; An Army of Commissioners to the French, 360.

G.

Geology in our Public Schools, 328; Gold, The Cheapest Process of All, 40; Our Western Mines Giving Out, 104; Gold and Silver, Our Last Gross Production, Ross Browne's Estimate, 281; Production, Another Batch of Erroneous Statements, 92.

H.

"Honor to whom Honor," 184; Hours of Labor, 328; How to Extract all the Gold and Silver from their Ores, 376.

I.

Indian Outrages, 280; Warfare, More Troops Needed, 72; Industrial Partnerships, 200; Iron and Steel, Product of the Past Year, 312; Manufacturing Convention of our, 264; Iron, our Resources, 72.

J.

Journal of Mining, Astonishing Success of—The Reason Why, 8; Vindicated, An Assailant Backing Down, 120.

L.

Let us Learn from our Neighbors, 56.

M.

Meteoric Shower, The, 120; Terrible Massacre of U. S. Troops—Are Miners Safe? 217; Metallic Yield, The N. Y. *Herald's* Estimate of, 312; Mill Process, A Remarkable—Astonishing Results, —; Miner, What he Loses by Leaving England, and What he Gains by Coming to America, 152; Death of a Pioneer, 152; A Millionaire in New York—An Example to be Followed, 361; Miners, A Warning to, on the Pacific Coast—Beware of Sodium Amalgam, 280; Ridiculous Return from the Tax—Abolish it, 144; Mines, Returning Confidence in our, 24; State Papers on American Minerals, Mines and Mining, with a Word or two about Statistical Agent J. Ross Browne, 168; American, 216; Stop Ruining our Coal, Copper, Gold, Silver, and other, 180; Deep, In the World, 376; Necessity of a National Bureau of, 392; Statistics of Mine Labor, 152; Proposed Revision of the Mineral Land Law, 265; Mining, Effect of Climate Upon, 392; Facts Not Fancies, 312; How to Make Investments Profitable, 280; Plagiarism, Stultification and Misrepresentation in Commissioner Ross Browne's Statistical Report, 296; Curious Figures as to the Relative Results of Gold and Silver Mining in California and Nevada, 248; Mining Companies, How Raised in New York—A Queer "Prospectus," 40; Debts of Certain—What are their Assets? 264; Mining Interests, Mr. Peabody's Aid to our, 72; Mining Engineers, A Suggestion to, 73; Mining Stocks are Dull, 24; Mining Stock Board, A Word or two to the New York, 120; Montana Looming Up—Millions for Defence, 24; Machinery vs. Hand-Labor in Coal and Other Mines, 408.

N.

Name Them, 40; New York the Hot-bed of Mining Swindles, How about other Cities? 104.

P.

Pacific Coast Mining Review, 88; Pacific Railroad Progress, 56.

R.

Reduction, Losses of Gold and Silver in the Course of, 200; Rolling in, 152.

S.

Salt, A Mountain of, 25; School of Mines, Our, 56; Slate Trade, To the, 248; Specie Payments, Proposed Resumption of, 120; Subscribers, To, 8; Notice to City, 40; To our, 376; Statesmen among the Iron Workers, 59; Sub-Aqueous Railways to Connect Brooklyn and Jersey City with New York, 72; Survey of the Far-western Mineral Districts, Geological, 377.

T.

Take Notice, 376: Tariff Bill, Death of the, 376; Tunnel, The Great Michigan Lake, 153; Sutro, 377; Sutro, the Ball still Rolling, 265; Dangerous Tunnels, 328; To the Living, of the Dying, 216; This Picture and That, 56.

W.

Work Enough for All, 344; Warning to British Capitalists—A California Copper Mining Scheme Shown Up, 360.

Y.

Yale College and its Collections, Geological, Mineralogical, and otherwise, 104.

Scientific Meetings.

American Institute, Polytechnic Branch—New Earth Pulverizer, Steam-engine Valve, Novel Power Communicator, On Ventilation, Petroleum Lubrication, Uses of Barytes, etc., 9; Fire-Proof Glover, A New Fuel and what is claimed for it, 25; Heat-Conducting Power of Mercury, Measurement of Resistance to be Overcome by a Magnet, Products of Petroleum, 41; New Feather-Paddlewheel, Improvement in Vertical Engines for Vessels, How the 'Evening Star' was Lost, Fire as a Disinfectant, The Cause of Cholera and Other Plagues, 73; The Avery Engine, Illumination, Gas Organ, Miller's "American Steam Boiler," Dr. Hirsh versus Dr. Van der Weyde, 105; Cause of the Decay of the Teeth, Climatic Divisions of the United States, 89; Reed's Proposed Engine, Steam Jib Propellor, Dr. Van der Weyde on Illumination and on Lubrication, Is Petroleum Liable to Cause Spontaneous Combustion? 121; New Plow, Speaking Trumpets for Light-house Signals, 153; Miller's Steam Pipes, Fleury's Rotary Disinfecting Apparatus, Bacon's Steam Indicator, Dr. Stevens and Prof. Graham on the Theory of Currents, 169; The New Form of Patent Certificates, Mr. Maury on Ocean Currents, Prof. Grimes' Theory, 185; Discovery of Dinosaurus, etc., Improved Artificial Legs, A New Feathered Wheel, Van der Weyde on Cosmogeny, New Theories, Newton not the Discoverer of Gravitation, 201; Prof. Rockwell's paper on the Deterioration of Coal by Exposure to the Atmosphere Combatted and Defended, Improved Method of raising Gold from Rivers, Laplace Again, Dr. Stevens on Extraordinary Opinions held by Men of Science, 217; Items of Scientific News, Remarkable Deposits on a Texan Island, Calculating Cards, Grimes on "Astrogenea," Attempts to upset Laplace's Theory, Irreverent Members Rebuked, 249; Is Bella Donna a Tropical Poison? Improved Method of Propelling Canal Boats, Origin of Graphite, Feutchwanger on Gold, Dr. Van der Weyde on Cosmogeny, 265; A New Petroleum Barrel, Miller's Improved System of Boilers, Hirsh on the Manufacture of Beet Sugar, 281; A Burning Sun, Upland Cotton, New Apparatus for Cooking and Keeping Cool, The Manufacture of Beet Sugar, Interesting Statistics, 297; Annual Election The Atlantic Cable and Longitude, A Voiceless Duck, Dr. Bradley pitches into the *Scientific American*, 329; The Late Prof. Bache, Scientific Notes from Dr. Hunt of Montreal, Fire Alarm, Molecular Theory, Bridge Building, 345; Duration of the Sun's Heat, Manufacture of White Lead, Flexible Copper, New Inventions, Hydrographical Basins of America, The Spectroscope, 362; Jansen on the Spectrum of Vapor, Gibb's Map of the Solar Spectrum, Fire-damp Explosions in Mines, The Harrison Boiler, Bridge Building, 393.

German Polytechnic Association.—Waving Chairs, What is the Best Solution for Hardening Steel, 169; Nitroleum in Blasting Operations, Letting off Blasts by Electric Agency, 184; Mosaic and Other Flooring, Annual Election of Officers, An Evening School of Civil Engineers to be Established, 249; Roof Girders, The Eclipse, 362; Machine for Making Fish-Hooks and Hooks and Eyes, 377; Sub-Aqueous Tunnelling, Mash Distillery, Mash Lifters, 409.

Professor Agassiz.—On the Geological Formation of the River Amazon, 313; On the River Amazon, Its Basin and Tributaries, The Ancient Glaciers in the Tropics, 328; On the Aquatic and Land Animals of the Amazon, 345; On Men and Monkeys, 361.

School of Mines, Columbia College—Inauguration of the Third Annual Lecture Season, President Barnard on our Country's Mineral Wealth, Prof. Newberry on the Advantages of Skilled Mining Labor, Prof. Egleston on the Progress of the Pupils, The Laboratories, Museum, etc., 57.

Society for the Advancement of Science and the Arts.—Cause of the Decay of the Teeth, Climatic Divisions of the United States, 89.

Xavier Alumni Association, 297.—Electricity, A Bishop Turning Watchmaker, etc.

Original Papers.

A.

Amalgamation, by J. H. Tiemann, M. E. 331, 346, 377, 394, 409.
A Statistical and Geological Report upon the Slate Trade of the United States, by R. A. Parrish, Jr., A. M., 250, 278.

E.

Effect of Exposure on Coal, by Prof. Alfred P. Rockwell, of Yale College, 185.
Electro Positive Metals, The, by Joseph Hirsh, Ph. Dr., 90, 106, 121, 154, 171, 186, 202, 217, 265, 291.

G.

Gold, Its Sources and Origin, by Dr. Louis Feuchtwanger, 298.

H.

How to Make Mining Investments Remunerative, by M. E. Keyes, M. E., 107, 201.

L.

Lead Fields of the Upper Mississippi, by J. Van Cleve Phillips, 58.

M.

Manufacture of Mineral Oils from Coal and other Bituminous Substances, The, 393.
Mining in Colorado, by J. A. H., 74.
Mineralogical Sketches of Counties in Scotland, by Prof. H. Dussauce, 121, 154, 170, 186.

N.

Noble Metals, The, by Prof. Francis E. Englehardt, 122, 153, 169, 266, 346.

O.

Oaks Colliery Explosion, The, by Prof. Alfred P. Rockwell, 218.
On the Method and Occurrence of Gold in North Carolina, by Dr. R. P. Stevens, 250.

P.

Pabranagat Silver Mining Region, by Charles Schenk, M. E. 91, 106.
Petroleum, Theory of the Origin of, by J. Van Cleve Phillips, M. E., 25, 41.

S.

Sardinia Metallurgy, by Dr. Joseph Hirsh, 73.
Sodium in Gold and Silver Amalgamation, the Utilization of, by Prof. Henry Wurtz, 10.
Silver Mines of Colorado, by "Seneca," 298, 314.
Southern Mines, by Dr. R. P. Stevens, 11.

T.

The Manufacture of Mineral Oils from Coal and other Bituminous Substances, 409.

Correspondence.

A.

Annita Copper Co., of Del Norte, Cal., More about the, 362; The "Annita" 377.

B.

British Mining, 185.

C.

Capital and Labor Reconciled, 73; Coal, Carelessness and Mismanagement of our Anthracite Mines, 362.

G.

Gen. Barnum's Defence of the Figuring he did for the *Herald*, 329.

H.

Hydrogeology—"Queer Facts about the Divining Rod,"—"Something in it," 9; Hazel Wands, More about, 25; A Thrust at "S" for making fun of, 41.

I.

Iron Ore, About "Spathic," A Misstatement Corrected, 249.

L.

Lead Poisoning, Do the Miners in the Mississippi Suffer from it, 73.

M.

Metal Workers of Great Britain, The, 90; Mines of Central America, Promise of Speedy Development, 313.

O.

Oil—Drawing Pipe from Abandoned Wells, 377; Subterranean Robbery—A Question for Lawyers, 90.

R.

Reduction, Losses of Gold and Silver in course of, The Coming Man not far off, 249.

S.

Slate—Is there a Scarcity of the Article, 73; False Statements and Figures Sponged off—Lower Prices needed, 281; Geologically and otherwise considered, 313. Sodium Amalgam—Letter from Prof. Wurtz, Experiments at the Gould & Curry Mill—20 per cent. Increase of Yield, 25; Prof. Wurtz Defends his Process against Mr. Kustel's Attacks, 105; Sodium Amalgam against Caustic Sodium, Prof. Wurtz and the *Daily Times*, 281; Working Experiments, Big Results from Colorado, 345. Stamps, Light not the Best—Light Stamp men pitched into, 217.

T.

The "Presentation" in Aid of the Destitute and Orphan Sons of our Volunteer Soldiers and Sailors—Is it a Humbug, 377.

W.

What Hollister thinks of Ross Browne's Report, 314.

Mining Summary.

A.

Africa, 258; Alabama, 295; Arizona, 5, 20, 36, 69, 148, 165, 181, 197, 212, 325, 339, 356; Arkansas, 21; Australia, 21, 53, 101, 149, 276, 358.

B.

Brazil, 245, 325; British Columbia, 6, 21, 37, 68, 165, 245, 292, 341; British Honduras, 149.

C.

California, 5, 20, 36, 52, 66, 147, 164, 179, 195, 212, 242, 260, 275, 276, 291, 295, 307, 309, 311, 324, 341, 356, 358, 371; Canada, 149, 213, 245, 275, 292, 340, 341, 357, 359, 373, 374, 375, 387; Colorado, 4, 21, 35, 52, 69, 84, 98, 146, 162, 181, 195, 211, 258, 275, 291, 323, 339, 343, 357, 372, 386; Chili, 276; China, 85, 245; Costa Rica, 54.

D.

Dakota, 387.

G.

Georgia, 20, 85, 100, 148, 396.

H.

Honduras, 340.

I.

Idaho, 3, 19, 36, 68, 83, 148, 165, 180, 196, 213, 260, 293, 307, 324, 340, 373; Illinois, 261, 277, 295, 325, 343, 358; Indiana, 37; Iowa, 343; Italy, 375.

J.

Japan, 85.

K.

Kansas, 100, 213; Kentucky, 295.

L.

La Platte, 53; Louisiana, 37, 52, 375.

M.

Marvland, 21, 181, 389; Massachusetts, 53; Mexico, 69 340, 341, 357, 374; Michigan, 2, 18, 35, 51, 67, 85, 100, 148, 164, 180, 197, 243, 261, 275, 276, 292, 293, 310, 325, 341, 357, 358, 374; Minnesota, 37, 98, 165, 197, 213, 244, 261, 340, 357, 373, 375, 387; Montana, 5, 19, 35, 51, 68, 84, 100, 148, 163, 180, 197, 210, 243, 274, 291, 324, 339, 355, 372, 374, 387; Missouri, 68, 82, 213, 261, 294, 310, 341, 342, 343, 374.

N.

Nevada, 3, 20, 34, 50, 67, 83, 98, 140, 162, 178, 194, 211, 244, 261, 275, 290, 306, 310, 322, 338, 341, 354, 370; New Brunswick, 53; Newfoundland, 194; New Grenada. 325; New Hampshire, 53, 147. 292, 293, 389; New Jersey, 245; New Mexico, 148, 181, 213, 262, 340, 357, 386; New York, 53, 245; New Zealand, 69, 276, 375; North Carolina, 69, 244, 373, 389; Nova Scotia, 53, 69, 149, 213, 295, 326, 343, 388.

O.

Ohio, 53, 213, 245; Oregon, 4, 21, 69, 164, 181, 245, 292, 293, 295, 308.

P.

Pennsylvania, 21, 82, 101, 163, 179, 196, 212, 242, 259, 277, 294, 310, 325, 326, 341, 342, 343, 358, 374, 389.

R.

Rhode Island, 53.

S.

South Carolina, 390; Spain, 358; St. Domingo, 37; Saskatchewan, 387.

T.

Tasmania, 295; Tennessee, 243, 276, 294.

U.

Utah, 21, 37, 52, 101, 148, 212, 244, 387.

V.

Venezuela, 275; Vermont, 292, 289; Virginia, 21, 196, 244, 277, 294, 343, 358, 389.

W.

Washington Territory, 5, 68, 165, 245, 307; Wisconsin, 37, 165, 342, 358, 359; West Virginia, 85, 165, 327, 373.

Miscellaneous.

A.

Alloys, Japanese, 245; Aluminium, 385; All Sorts —13, 29, 45, 61, 77, 93, 109, 124, 140, 173, 205, 237, 268, 279, 301, 317, 379, 397; Amber, 298; Antediluvian Remains in New York, Extraordinary Discoveries at Cohoes, 113: Amalgams, 2; Amalgamator, Mitchelle', —; Age of the World, 66; A New Motive Power, Peas, 50; A Profitable Furnace Investment, 66.

B.

Blue Slags, 205; Black Country, the, 209; Boiler Discovery, Important, 354; Boiler Experiments, Interesting, Steam 130.

C.

California, At the Coming Exposition, 146; Fire Clay, 146; Great Mining Enterprise in, 162; Resources of, 230; Sulphur and Borax, 311; Land Slides in, 322; Cataract of the Nile, Geology of the first, 245; Cave, Blowing, of Georgia, 12; A Flinty, 338; Coal, Southern, 17; Cheap, for Winter, 33; Economy in the Production of, 44; Spontaneous Combustion of, on Board Ships, 44; Combustion of Fuel in Furnaces, 33; Another Discovery, 130; The South Wales, Field, 295; Australian, 81; Artificial Tannin from, 145; British Exports, 149; Authracite and its Transportation, 194; Anthracite, 209; Staffordshire Mines, a Singular Assertion, 210; in Missouri, 257; The London Trade, 317; Product of the United States, 322; and Iron, 337; Formation of Seams, 337; Spanish Mines, 385; and Iron in Wales—The Miners' Steel and Iron Works, 28; India, 193; Coinage Annual, American Mint, 161; Copper, New Washers, 1; How they Smelt in Chili. 65; The Richest Mine of Lake Superior, 166; The World's Product, 274; Separation of Palladium and, 322; Comstock, ores of the, 242; Combustible, The New French, 130; Colliery Explosions, The Recent, 226; What Tom Brown thinks of, 242.

D.

Deluge, the Next, 205; Desulphurization of Native Sulphides, 81; Dinosaur, Remains of a Gigantic, 205; Dips, Angles and Variation, 50; Discoveries in Steel, 401.

E.

Explosive, New Agents, 130; Newmeyer's New, 145; Excavator, a New, 237.

F.

Fossil, a Montana, 209; Ivory, 241; Fossils, More Gigantic, 257; Mount Diablo, 274; Fire Damp Indicator, Ansill's, 177; Fires, a Method of Extinguishing, 45; Frog, Disentombed, Another Diving, 1; Fact for Scientists, A, 322; Furnace, a Cheap and Practicable, 82: The Wilson, 97; Mr. Richardson's Petroleum, 162; The Silesian Gas Reverberatory, 289; New Roasting, 375; Bergue's, for the Reduction of Iron Ores, 380; Fire Damp, 401.

G.

Gas, for New York City from the Coal Regions, 44; Supply, 50: Glacial Period, The, 369; Gold, Cement Claims of California, 17; The Flow of, to the United States, 65; Deposits, 130; Decreased Production of, 145; A Valuable and Well-managed Mine, and Mode of Extracting the Gold, 322; One Hundred Million Dollars Annual Product of Africa, A Private Claim against France, 337.

H.

Horn Test, The, 33.

I.

Iron, Tinning, 12; Primitive Workers, 50; Works of Chicago, 114; A Wonderful Cement for, 141; The Best American Ores of, 177; Large Works, 177; A Mountain in Swdden, 193; Russian, 307; Mending Castings, 327; And Coal, 337; Smelting in France, 369; Peat, 236; New Process for Making Wrought, 257; Case Hardening of, 258: Manufacturing and Remelting, 369.

J.

Journal of Mining, What is said of it by the Press, 13, 141, 221, 301.

K.

Kansas, 226.

L.

Lead, 149; Living Fish in the Dead Sea—Chemical Composition in the Water, 117; A Lake with a Hole in the Bottom, 289; The Pitch Lake of Trinidad, 307; A new Light, 311; Lunar Eruptions, 338.

M.

Manganese, 237; Magnesium, 289; Marble, French, 117; Mastadon, More About the, 141; Mont Cenis Tunnel, The, 141; Molten and Fluid State of the Globe, 359; Metallurgical Treatment of Gold Ores, 319; Metals, Separating Phosphorus from, 50; Expansion of, 146; Effect of Heating, Rolling, Hammering and Annealing, 354; Metal Works, Noxious Vapors from, 308; Mines, Report on the, of the West, by J. Ross Browne, 290; Life in the, of the West, 1; The British Coal, 109; Depths of, in England, 290; Australian, 322; The Gold and Silver East of the Rocky Mountains (Official Report of United States Commissioner Taylor), 386; Minnesota, Remarkable Discoveries in, 177; Miners, Income of, 130; Mineral, Queer Discovery, 1; Products of Spain, 308; Resources of the Pacific States. 385; Mineral and Metallic Deposits, Chemical and Mechanical Action in the Formation of, 81; Mineral and Other On Dits, 12, 29, 45, 61, 93, 109, 124, 146, 189, 204, 221, 236, 268, 279, 301, 349; Mining, Profits of Gold, 1; Quartz in California, 28; in Ireland, 98; Machinery, 161; Curious Results of Deep, 193; Statistics, Ross Browne's Report, 209; Vein, 327; New Invention, 380.

N.

Nevada, Silesian Formations in, 221; Nitro-Glycerin, 28; the Properties of, 29.

O.

Oil, The largest Flowing Well in the World, 219; The Original Man of Canada, 101; Distilling Invention, a British, 113; Manufactured Mineral, 385; Oreide, 402.

P.

Popocatapelt, 44; Peat, In Italy, 113; As. Fuel, 117; Fuel for Smelting, 117; Petroleum, In America, Geological Distribution of, 1; In Italy, 33; Origin of, 44; Turpentine from, 241; Our Exports, 258; Pump, Blasting Patent Chain, 370; Patent Claims, 12, 29, 60, 77, 93, 109, 124, 140, 157, 173, 189, 204, 220, 236, 268, 279, 316, 364, 379, 396.

Q.

Quicksilver, 177; Quick Travel, 385.

R.

Reduction Works, The Murphy Mine, 101; Rocks, The Cretaceous of Spain, 241; Novel Process of Blasting, 241; A Moving Rock, 353; Ross Browne Again, 385.

S.

Silver, Occurrences of. 213; New Process for Working Ores, 279; Amalgamation of Ore, 307; Special Scientific Brevities, 29, 45, 61, 77, 93, 109, 124, 140, 173, 189, 204, 221, 236, 279 317, 349. 365, 379, 396; Sodium Amalgam, Kustel vs. Wurtz, 101; More About the Discovery of the Process, 273; Stamp Mills, Coloradian Experience in, The Lighter the Stamps the Better, 181; Steam, Condensed History of, 197; Steel Moulds for Casting, 17; Manufacture of Castings, 73; Railway Tracks, 257; Manufacturing and Re-melting, 369; Swindling Concern, A, 12; An Excellent Suggestion, 242; The Sun, 353; Smelting in Chihuahua, 369.

T.

Transparent Metals, 45; Timber, Durable, 1; Torpedo, Colonel Roberts', 76; Treasure Product of the World, 391; Tunnelling, 237; Testimony of Science, 353; Transportation from the Missouri River to the Rocky Mountains, 396; The Testimony of the Rock, 401.

V.

Volcanic Island, The New, 97; Victoria Gold Fields and the Poor Rocks there Worked to a Profit, 43, 60, 75.

W.

Welch Gold Diggings and Sodium Amalgam, 44; Wonderful Land with Stone Trees Six Hundred Feet Long, 65; Wrought Iron, New and Cheap Process of Making, 113; World, The End of The, 131.

Poetry.

A Song for the Stock Exchange, 50; Better than Gold, 66; Building on the Sand, 194; In a Coal Mine, 82; Lines to a Skeleton, 146; Music of Labor, 274; The Miner, by James Russell Lowell, 18; The Undiscovered Country, 370; The Workers, 98; There's Work Enough to do, 130; Toil and Song, 162; True Gold, 114; Tubal Cain, 2; Wasted Time, 210; What shall we do for Coal, 34.

Machinery and Engravings, Descriptions of.

A

Albertson & Douglass Horizontal Engine, 385; Andrews' Patent Oscillating Engine, 130.

D.

Dart's Improved Stamps, 81; Davis' Improved Steam Boiler, 161; Durkee's Automatic Sawing Machine, 401.

E.

Eureka Brick Machine, 359; Eureka Patent Pump, 337, 338.

F.

Foster's Rotary Pump and Blowers, 369.

G.

Guild & Garrison's Balance Wheel Steam Engine and Pump, 1; Direct Acting Union Pump, 33.

H.

Hill's Patent Skeleton Grate Bars, 241; Hitching's Improved Reduction Machinery, 17.

M.

Miller's American Steam Boiler, 209.

P.

Pioneer Iron Works Oscillating Engine, 145; Player's Improved Hot Blast Stove, 353.

R.

Root's Patent Trunk Engine, 226; Roper's Hot Air and Caloric Engine, 193.

S.

Saw Mill, Improved Circular, 322; Sergeant Boiler, 257; Steam Syphon Pump, 50; Storer's Open Top Suet Lubricator, 289.

T.

Todd & Rafferty's Horizontal Steam Engine, 97; Double Hoisting Engine, 113.

W.

Warren's Turbine Water Wheel, 307, 311; Watts, Campbell & Co.'s Horizontal Steam Engine, 177.

New Publications.

National Quarterly Review—American Exchange and Review—Benedict's Time Tables, 25; Geological Surveys, 58; Transactions of the American Institute —American Exchange and Review, 73; Metallurgical Assaying—Report of the Mineral Resources of the States and Territories West of the Rocky Mountains—The Gold and Silver Fields of Oregon and Idaho—The Telegraph Cable, 313; Report on the Operations of the Internal Revenue System in the United States, 331; The Telegraph Cable—A Review of the Mining, Agricultural and Commercial Interests of the Pacific States for 1866, 361.

Tabular Matter.

A.

Annual Report of the Coal Trade for 1866, 282.
Amount of Bullion taken from the Gould & Curry Ores for Year Ending Dec. 31, 1866, 322.

B.

Bullion Shipped from Virginia and Gold Hill, Nevada, for 1865 and 1866, 322.

D.

Directories of Mining Companies, Names, Number of Shares, Capital Stock, Situation of Property, Secretary and Place of Business; Gold, 6; Lead, 6; Silver, 7; Copper, 7, and elsewhere.

F.

Fluctuations of the Leading Nevada Mining Stocks for 6 months, 84.

M.

Mineral Products of Spain, 308; Monthly Fluctuations of Nevada Mining Shares for 1866, 306; Sales of Same at San Francisco, Cal., 307.

P.

Pacific Coast Mineral Production, 308.

Q.

Quicksilver Exported from San Francisco since 1859, 295.

S.

Slate, Chemical Analysis of, 251; Value of Imports and Exports of, and a Statistical Table of the Product of the Slate Quarries of the United States for the year 1866, 278.
Statement of Some of the Expenses and Profits of Some of the Mines on the Gold Belt of California, 201.

T.

Treasure Shipments from Portland, Oregon, to San Francisco, for two and a half years, 309.

Market Reviews and Reports.

Coal Trade, New York, 11, 26, 42, 59, 74, 91, 107, 122, 155, 171, 187, 202, 219, 252, 267, 284, 300, 315, 331, 347, 363, 378, 395, 411.

Copper Ores, N. Y. and Baltimore, 188, 204, 220, 253, 268, 285, 316, 396.

Metal Market, N. York, 12, 27, 43, 60, 75, 93, 108. 124, 156, 173, 189. 204, 220, 268; London, 12, 27, 43, 92, 108, 156, 188, 220, 268, 285, 316, 347, 364.

Oil Trade Circular, London, 27, 43, 93, 108, 156, 188, 220, 253, 316, 347, 364.

Slate Trade, New York and Boston, 284, 299, 315, 331, 347, 363, 378, 395, 411.

Stocks, Boston, 172, 188, 204, 220, 253, 268, 285, 301, 316, 347, 396, 412. New York, 12, 26, 42, 58, 74, 91, 107, 122, 155, 171, 187, 202, 218, 251, 266, 284. 299, 315, 331, 347, 363, 378, 394, 410. San Francisco, 12, 26, 43, 60, 75, 124, 156, 172, 188, 220, 253, 268, 316, 347, 364, 379, 396, 412.

Special Notices.

Ryland's Iron Trade Circular, 29; E. B. Dorsey, 43; same, 60; Pittsburgh *Mining and Manufacturing Journal*, *Union Vedette*, *Stockholder*, Harrison Boiler, 124; Institute of Reward for Orphans and Patriots, 140; L. G. Tillotson & Co., 140 and 157; *Evening Post*, W. D. Andrews & Bro., Adam Stewart, 93; *American Artisan*, 93 and 253; Prof. H. Dussauce, James O'Kane's Books, 204; Wood & Mann Steam Engine Co., Golconda Gold Co., 253; *Scientific American*, U. S. Blasting Oil Co., 237; *Turf, Field and Farm*, 286; Prof. Benj. Silliman, E. G. Sheppard, Messrs. Campbell and Hardick Bros., Henry R. Worthington, New York *Era*, 301; Levey Bros., The Woodward Steam Pump Manufacturing Co., 317; W. & R. Foster, J. H. Tiemann, Roberts' Torpedo, James Dammers. Harrison Steam Boiler, 333; J. S. Phillips, C. E. M., 349; Petroleum Fire-proof Iron Tank Storage Co., 349; Messrs. A. S. Cameron & Co; Stephen McGinnis, 365; The San Francisco *Mining and Scientific Press*, 397.

INDEX.

Meetings, Dividends, Assessments and Statements, 10, 25, 41, 58, 73, 90, 106, 120, 153, 169, 185, 201, 217, 249, 265, 281, 297, 313, 329, 345, 361, 377, 393; 409; Assessments, 106, 120, 153, 169, 249, 265, 297, 361, 393; Statements, North Western Mining Co., of Detroit, 25; Ohio and Colorado Gold and Silver Mining Co., 57; Crescent Silver Mining Co., 58; Hiawatha Gold and Silver Mining Co., 58; Tudor Lead Mining Co., 89; Silver Glance Mining Co., 90, 120; Ashburton Coal Co., 393.

Advertisements.

Ackerman & Voght, the Sergeant Boiler, 400.
Aecternacht & Co., Coal, 13.
Alexander & Co., Coal, 79.
Andrews & Bro., Wm. D., Engines & Pumps, 16.
Appleton & Co. Books, 160.
Albertson & Douglass, Machine Co., 397.
Ashbury Iron Manufacturing Co., 301.
Audenreid & Co., Louis, Coal, 13.

Barber & Wyckoff, Ore Reducers, 16.
Behr & Keith, Desulphurizing Process, 16.
Birmingham Iron Foundry, Chilled Rolls, 173.
Bishop Gutta Percha Co., Telegraph Cables, etc., 13.
Bronson, Geo. H., Machinery Oils, 349.

Cameron & Co., A. S., Steam Pumps, 16.
Campbell & Hardick Bros., Steam Pumps, 16.
Champion & Co., Joseph, Steam Engines, 14.
Clayton, James, Steam Pumps, 16.
Colliery Proprietors of South Lancashire and Cheshire (Eng.), Coal Cutting Machinery, 397.
Cook, Overfield & Snedeker, "Stafford's Slate Tables," 397.
Commissioners on the Troy and Greenfield Railroad and Hoosac Tunnel, 301.
Covington, J. M., 349, 414.

Dalton Knitting Machine Co., 13.
Dammers, James, Cancelling Stamps, 15.
Delaware, Lac. & W. R. R. Coal Sale, 333.
Devin. J. C., Mineral Lands, 253.
Dorsey & Flint, Engineers, 47.
Duncan Sherman & Co., Bankers, 14.
Duplex Steam Boiler Manufacturing Co., 397.
Dussauce, Prof. H., Chemist, 14, 16.

Empire Sewing Machine Co., 15.
Englehardt, F. E., Analytical Chemist, 14.
Eureka Patent Pump Co., 349.

Fenchtwanger, L. & J. W., Copper Mines, 289.
Fire-Proof Iron Tank Storage Co., 15.
Forney, J. W., "Forney's Weekly Press," 253.
Foster, W. & R. Rotary Pumps and Blower, 221.

Galt, John, Roofing Slate, 269.
Geoghegan & Co., Stephen J., Steam Pipes, Fillings, Pumps, etc., 333.
Grovesteen & Co., Pianos, 15.
Guild & Garrison, Steam Pumps, 16, 414.

Harrison, Joseph, Steam Boilers, 128.
Heald & Sons, S., Saw Mills, etc, 333.
Heckscher & Mason, Coal, 77.
Henderson, James, Heating Stoves, 365.
Hill & Co., Warren E., Grate Bars, 253.
Hirsch, Dr. Joseph, Chemist, 78.
Hitchings, J. A., Mineral Lands, 15.
Holladay Overland Mail and Express Co., 14.
Hoadley & Co., J. C., Steam Engines, 16.
Hubbard & Whittaker, 13.
Hughes, Bela M., Attorney-at-Law, 160.
Hutchinson, R. A., Steam Engines, 16.
Hutchinson & Lawrence, Machinery, 317.

Jacobie, Freeman, Brick Machine, 414.
Johnson & Co., Sewing Machinery, 397.
Johnson, John, 380.
Journal of Mining, Prospectus, 13.

Kerosene Lamp Heater Co., 15.
Kistler, Hon. S. J., Slate Quarries, 253.

Ledyard, T. D., Oil and Mineral Lands, 15 and 401.
Lilienthal, Adolph, Quartz and Ore Treating Works, 349.
Luyster, A. L., London Books, 253.
Leyon Peat Machine Co., 301.

Manner & Co., Pianos, 189.
Marvin & Co., Safes, 157.
Maynard & Tiemann, Mining Engineers, 16.
McCullogh, H., To Inventors and others, 414.
Morton, Gold Pens, 237.
Murphy, John P., Mineral Lands, 14.

New York Steam Engine Co., Stamp Mills, 317.
North Star Gold and Silver Mining Co., 253.

O'Kane, James, Books, 189.
Osborn L. E. Davis' Bolt Header, 173.

Packer & Co., E. A., Coal, 13.
Pennsylvania Coal Co., Auction Sale, 236.
Phillips, C. E. M., J. S., Mining Engineer, 349.
Pickering & Davis, Spring Governor, 320.
Pioneer Iron Works, Engines and General Machinery, 157.
Pioneer and Inskip Mill and Mining Co., 141.
Pohle, Julius G., Analytical Chemist, 14.
Polley & Co., Frank B. Sergeant's Boilers, 286.

Regna, Abram, Brick Machines, 365.
Robinson, James A., Ericsson Caloric Pumps, 384.
Rock Drill Co., N. Y., 15.
Rockwell, Alfred P., Mining Engineer, 189.
Root Steam Engine Co., Trunk Engines, 223.

Salamander Works, Fire Brick, etc., 349.
Saward & Co., W., Coal, 13.
School of Mines, Columbia College, 16.
Selpho & Son, William, Artificial Legs, 301.
Shaffer, Tal. P., Nitro-Glycerine, 237.
Sheppard, E. G., Mineral Land, 301.
Silliman, B., 301.
Silver, Charles, Coal, 13.
Slote & Janess, Books, 380.
Stewart, Adam, Turning Lathes, 14.
Storer, Jacob J., Mills and Furnace Rights, 339.

Talcott, George, Turbine Water Wheels, 397.
Taylor & Scott, Mining Engineers, 16.
Thomas, Charles W., 365.
Tiemann, J. H., Analytical Chemist, 336.
Tillotson & Co., L. G., Mineral Paint, 160.
Todd & Rafferty, Machinery, 142.
Torpedo Co., The Roberts Petroleum, 78.

United States Assay Office, 193.
United States Blasting Oil Co., Nitro-Glycerine, 189, 237.
Uren, Dunstone & Blight, Safety Fuse, 160.

Waters' Sons, John, Gold and Silver Refiners and Assayers, 301.
Waters, Horace, Pianos, 15.
Warren, Alonzo, Turbine Water Wheels, 301.
Watts' Campbell & Co., Passaic Machine Works, 189.
Western & Co., Books, 14; Assaying, 15; Designing, Wood Engraving and Lithography, 15; Printing, 15; Canvassers Wanted, 15.
Wheeler & Wilson Sewing Machine Co., 335.
White, John, Coal, 13.
Wilkins, Joseph L., Coal, 13.
Willard & Millward, Machinery, 89.
Williams, Charles P., Analytical Chemist, 14.
Winans, H. N., Anti-Incrustation, 16.
Winter & Co., Circular Saw Mills, 14.
Woodward Steam Pump Manufacturing Co., 16.
Wood & Mann Steam Engine Co., 16.

Yale, Gregory, Attorney and Counsellor-at-Law, 286.

AMERICAN

Journal of Mining,

Milling, Oil-Boring, Geology, Mineralogy, Metallurgy, etc.

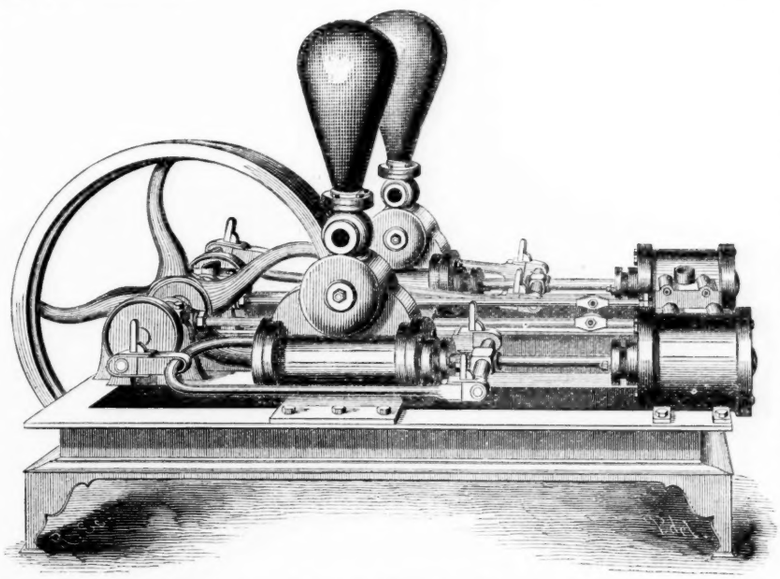
VOLUME II.
NUMBER 1.

NEW YORK, SEPTEMBER 29, 1866.

$4 A YEAR IN ADVANCE.
SINGLE COPIES TEN CENTS.

STEAM PUMPS.

We present to our mining friends, on this page, a faithful illustration of Guild & Garrison's Double Balance Wheel Steam Pump and Engine—a double arrangement of their Fly-Wheel Pump. The manufacturers (55 and 57 Grand street, Williamsburgh, N. Y.,) claim that the supply of steam will of itself start and work the engine; that the cranks are at right angles with each other and can never be caught "on center," or in any way deranged; that the motion is constant and uniform, with full power through the whole stroke, and equally regular at any rate of speed; that the machinery is simple and easily managed, the column of water discharged in a smooth and even stream, and the rate of speed may be graduated at will, without affecting the uniformity of motion. With this, we close our present illustrated series of noticeable pumps, remarking *en passant* that miners needing such machinery cannot go far astray in selecting from any of those which we have brought to their notice.



GUILD & GARRISON'S BALANCE WHEEL STEAM ENGINE AND PUMP.

Queer Mineral Discovery.

At Black Hill, Mariposa county, W. G. Hidley has recently discovered a very singular mineral formation, said to consist of small veins of asbestos averaging about an inch in thickness, mixed with clay, and running through a black serpentine rock. The most singular part of this discovery is that these thin seams of asbestos are rich in gold.

Profits of Gold Mining.

From a late number of the San Francisco *Miner*, we extract the following statistics, showing the profit of gold mining in California. The mine referred to in the following table is the Sierra Buttes Gold Mine, located twelve and a half miles east of Downeville, Sierra county, Cal., owned in part by Reise Brothers. This mine was located in 1851, and worked with arastras until 1856. The present owners then purchased it, and commenced to work it in the spring of 1857, with five arastras and one Chili roller, with the following results:

	Taken from Mine.	Expenses.	Dividends.
1857	$50,000	$15,000	$36,000
1858	66,000	15,000	40,000
1859	88,000	28,000	68,000
1860	120,000	37,000	83,000
1861	193,900	48,000	150,000
1862	166,000	54,000	112,000
1863	156,000	57,000	99,000
1864	90,000	75,000	15,000
1865	196,000	64,000	132,000
	$1,120,000	$385,000	$735,000

The above expenses include every improvement, from the location to the present time. No assessments were ever called for, the produce of the mine paying for everything. In 1858, the company built an eight-stamp mill. In 1860, they built one of twelve stamps, and abandoned the arastras and roller; in 1862, they built another twelve-stamp mill. The reasons why the returns in 1863 and 1864 were light, were that the water was limited. To avoid this, in 1864, they built a flume at an expense of $40,000, from which a supply of water is now obtained. The mine consists of two ledges, running parallel with each other, one hundred feet apart, averaging, one nine feet and the other twenty feet in width.

Here is another: the Funk Mine, located on Gentry's Gulch, nine miles north of the Mercer River, near Coulterville, Mariposa county. The rock from this mine is crushed by two five-stamp batteries, moved by a water-wheel. One of these batteries was worked five months, and the other seven months, during the year 1865. The whole expense of working the mine and the mill was less than $15,000, while the books at the mint show that the owners of this mine, Messrs. Hamilton and G. Coward, deposited $53,370 in gold, taken from it during the year.—*Phila. Com. List.*

The Geological Distribution of Petroleum in America.

Professor Hitchcock, in a paper on the geological distribution of petroleum in America, read before the British Association, adverted to the discovery of this oleaginous substance, and gave statistics respecting it. Previous to 1861 the quantity produced was not worthy of mention, but in that year the United States produced 24,000,000 gallons. In 1862 it produced 40,000,000; in 1863, 70,000,000; in 1864, 87,000,000; and last year 91,160,000, valued at about $28,000,000. This estimate did not include the petroleum exported during the same period from Canada West. The amount produced there for the historical three months in 1862 was prodigious, the yield being estimated at 5,000,000 barrels or an average of 55,200 per diem. The United States Revenue Commission in February last estimated the daily yield there at 12,000 barrels.

Durable Timber.

Of the durability of timber in a wet state, the piles of the bridge built by the Emperor Trajan over the Danube afford a striking example. One of these piles was taken up and found to be petrified to the depth of three-quarters of an inch, but the rest was perfect.

New Copper Washers.

In our trip along the range last week, we again visited the Ogima Stamp Mill to note the operation of Mr. Spalding's New Washers, and found them working still better than at our previous visit. That they discharge clean copper (ready to go to the smelting works,) at the back hutch, after passing through only one sieve, is apparent to any observer. Mr. Spalding claims several other advantages over other machines, which, from what we have seen, are "less power and less water to work; and a better and more uniform motion; a capacity to do more work to each sieve without wasting copper; less expense for repairs," etc.; also, a self-regulating ragging discharge (without loss of water) which keeps the ragging on the sieve at a regulated depth. —*Ontonagon Miner.*

Another Living Frog Disentombed.

The Portage Lake (Michigan) *Gazette* says that a live toad was recently thrown out of the solid conglomerate, in the Calumet mine, at a depth of 15 to 20 feet from the surface. Six persons say they are certain it was taken out of the rock. It is thought that he is a very old frog or a very big "sell."

Life in the Mines of the West.

Sunday, says the writer of an article on Montana, is distinguished from other days in being the great day of business. The mines are not worked and it is the miners' holiday. All is bustle and confusion. A dozen rival auctioneers vend their wares, and gallop fast horses up and down the street. The drinking and gambling saloons and dancing houses are in full blast, all with bands of music to allure the passing miner, who comes into town on Sunday to spend his earnings. The discoverer of Virginia is the miner *par excellence*—a good-natured Hercules clad

in buck-skin, or a lion in repose. All the week he toils hard in some hole in the earth for this Sunday folly. The programme for the day is prepared on a scale of grandeur in direct ratio to the length of his purse. The necessity of spending the entire week's earnings is obvious, and to assist him in doing so seems to be the only visible means of support of half the people of the town. The dance-house and the gambling-saloon, flaunting their gaudy attractions, own him for the hour their king. His Midas touch is all-powerful. I must confess, with all my admiration for his character, that his tastes are low. I know that the civilization of the East would bore him immeasurably, and that he considers Colt, with his revolvers, a broader philanthropist than Raikes with his Sunday schools. But he is frank and open, generous and confiding, honorable and honest, scorning anything mean and cowardly. Mention to him, in his prodigal waste of money, that a poor woman or child is in want of the necessaries of life, and the purse-strings open with a tear. Tell him that corruption and wrong have worked an injury to a comrade or a stranger, and his pistol flashes only too quickly, to right it. Circumstances have made him coarse and brutal, but below all this surface beats a heart full of true instincts and honest impulses. I am certain the recording angel will blot out many of his sins, as he did those of Uncle Toby. His means exhausted, he abdicates his ephemeral kingdom, and, uncomplaining, takes his pick and shovel, his frying-pan, bacon and flour, and starts over the mountains for new diggings. Yet he gains no wisdom by experience. The same bacchanalian orgies follow the next full purse.

About Amalgams.

M. Roussin states that he has observed that a sodium-amalgam shaken up with an aciduous solution of a salt of chromium, or a salt of manganese, changes to an amalgam of chromium or of manganese, as the case may be, and that an amalgam of either of these metals, obtained in the manner indicated, when distilled in a current of hydrogen, after having been first carefully washed in acidulated water, leaves the pure metal in the form of a pulverulent sponge. The amalgam of manganese, he adds, is opalescent and crystalline; that of chromium more fluid, and less variable at ordinary temperatures. When the latter is heated in a small porcelain capsule in the air, as the mercury flies out in vapor it carries off mechanically with it particles of chromium, which take fire, producing a singular scintillation, which is best observed in a darkened room. At length the chromium remaining in the capsule suddenly becomes incandescent, and burns to oxide.

Tubal Cain.

Old Tubal Cain was a man of might
In the days when Earth was young,
By the fierce red fire of his furnace bright
The strokes of his hammer rung,
And he lifted high his brawny arm
O'er the iron glowing clear,
Till the sparks rushed out with scarlet rout
As he fashioned the sword and spear,
And he sang, hurra for my handy work!
Hurrah for the spear and sword!
Hurra for the man that can wield them well—
He shall be King and Lord!

And to Tubal Cain came many a one
As he sat by his roaring fire,
And each one prayed for a stout steel blade
As the crown of his own desire.
So he made them weapons sharp and strong,
And they shouted loud for glee,
And they gave him gifts of pearl and gold,
And spoils of the forest free,
And they sang hurra for old Tubal Cain
Who had given us strength anew,
Hurra for the smith, and hurra for his fire,
And hurra for the metal true.

But a sudden change came o'er his head
Ere the sitting of the sun,
And Tubal Cain was filled with pain
For the evil he had done;
For he saw that men, with rage and hate,
Made war upon their kind,
And the land was red with the blood they shed
In their lust for carnage blind,
And he said, alas! that ever I made,
Or that skill of mine should plan,
The sword and shield for those who wield,
To destroy their fellow man.

And for many a day Old Tubal Cain
Sat brooding o'er his woe,
And his hands forebore to smite the ore,
And his furnace smouldered low;
But he rose at last with a cheerful face
And bright courageous eye,
And he barred his strong right arm for work
While the red flames sought the sky,
And he sang, hurra for my handy work!
Hurra for the sword and spear!
Not alone for the blade was the bright steel made,
Then he fashioned the first plow-share.

And men, taught wisdom by the past,
In friendship joined their hands,
Hung the sword on the wall, the spear in the Hall,
And plowed the willing lands;
And they sang, Hurra for Old Tubal Cain!
Our staunch good friend is he,
And for the plow-share and the plow
To him our praise shall be.
But while oppression lifts its head,
Or a Tyrant would be Lord,
Though we may thank him for the plow
We'll not forget the sword.

Mining Summary.

Michigan.

Alexander Campbell, in an article on the Mining Regions of Lake Superior, says: "The iron enterprises of this lake have been quite free from inflated and dishonest speculation, though not wholly. This, of course, grows out of the fact that iron is a cheap ore, and its production is far less exciting than that of the richer ores or metals, and hence less speculative. But coarse and cheap as iron ore is, from its inception as a business on this lake, until the close of 1864, it shrinks not in comparison—the capital invested and all other essentials considered—with any other great enterprise in the land. Indeed, if we could but specify the annual profits now realized on the manufacture of the ores and metal mined and manufactured and shipped from Marquette annually, in addition to that made by the companies operating here, we would confound you with a statement of profits—not of hundreds of thousands—but of millions of dollars, and all this from a business actually still in its infancy. Its margin may not be always as large as some other enterprises in given cases and times, but as an investment and business in all its relations and at all times, to miners, sellers and shippers of the raw material, to all it brings a sure and satisfactory return." .....An Exchange says: "Detroit is not contented with the profit of a score of dollars on native copper, but she gains in working it up. The success of the Michigan iron interests is no longer doubtful. Her iron, for all purposes of malleable manufacture, is equal to the ore of Iron Mountain in Missouri, and yields a yearly revenue of over $3,000,000 on shipment. In no way can Detroit better advance her true interests than in nourishing home manufactures.' .... The Houghton *Mining Gazette*, Sept. 13th, gives the following as the August product of the Portage Lake Mines:

Quincy Mine.—Stamp work	240,210 lbs.
Or 120 tons, 220 lbs.	
Hancock Mine.—Stamps	78,530 lbs.
Mass	26,980 lbs.
Total	105,510 lbs.
Or 52 tons, 1510 lbs.	
Isle Royal Mine.—Stamp	41,394 lbs.
Mass	28,450 lbs.
Total	69,844 lbs.
Or 34 tons, 1844 lbs.	
Grand Portage Mine—20 days.—Mass, barrel and stamp	53,897 lbs.
Or 21 tons, 1897 lbs.	
Albany and Boston Mine.—Barrel work	2,910 lbs.
Cover work	3,480 lbs.
Nos. 2, 3 and 4	28,775 lbs.
Total	35,165 lbs.
Or 17 tons, 1165 lbs.	

From the Marquette *Mining Journal* we take the following shipments of ore (in tons) from Marquette and Escanaba, as reported by the Companies Agents:

	Week ending Sept. 14	Previously reported.	Total.
Lake Superior Iron Co	3,076	41,253	44,329
Jackson Iron Co	1,655	13,096	*14,752
" " "			†32,113
P. & L. Angeline Co	1,781	16,362	13,143
Cleveland Iron Mining Co			*24,771
" " "			†12,837

*Shipped via Marquette. †Shipped via Escanaba.

The same paper says: The Washington Mine has a working force of twenty-five men at present, a large force confined to the Brants and Stagmire openings. The difficulties which have attended the shipment of ore this season has been a great detriment to all the mines—the Washington with the others; yet this mine has had the advantage of non-interference from the miners during their "strike," its men being constantly at work, and the company shipping ore, when many of the other mines were lying idle. The Washington Company will probably ship a trifle over 20,000 tons this season ...From the Ontonogan *Miner*, Sept. 15th, we learn the following: At the Evergreen Bluff the show of heavy copper is better on surface than in the mine, though the general appearance of the lode in stamp and barrel work is better than it was a month ago. The copper house contained 25 barrels of mineral and some 15 tons of mass copper, the largest piece of which—from the main mass in last month's returns—will probably go over four tons. .....At the Ogima a new shaft, No. 3, about 3,000 feet west of No. 2, was commenced this week. The X fms. level will be driven west to connect as soon as possible with this shaft. The lode in the other openings is producing about the usual amount of stamps and barrel work.....At the Mass mine, having sunk some feet by the mass on the north side of the "Champion lode," they found it still going down strong, and hence decided best to cut it off, which has been done. The one on the south side of the level will be removed also, and probably in the same manner, each succeeding day adding fresh evidence of the exceeding richness of the lode at that point ..... The Knowlton mine throughout shows less heavy copper than it has often done, but for uniformity of paying vein, its present appearance has seldom been equalled and never excelled. It is also in better shape on surface; shaft houses, mineral sheds, stamp mill, roads, &c.....At the Caledonia mine the level on the Knowlton vein, and the stopes over it, continue to produce well. West of the fissure, both on the 1st and 2d levels, they are getting a large amount of very rich vein matter, mostly stamp and barrel work, some of the latter from 150 to 200 lbs. each. The 1st and 2d levels on the fissure vein are each nearing the Champion lode; the former will probably intersect it ere another week. The west openings, in the old adit, on this lode, are showing as well, if not better, than at any previous time. A sand-blast on Tuesday P. M. partially raised a larger mass than any of the former ones, not less than 15 tons, and still the foot wall rock is rich in copper ... At the Rockland mine the stopes over the XC level east of No. 4 shaft—old north vein, are showing very well, also those over the LX and LXX level west of No. 1 shaft. Indeed this—west part—of the mine has been steadily improving for the past year, and now shows as well, if not better, than ever before.....At the Minnesota, improvements in the value of the conglomerate vein still continue. Stopes over the 6th and 7th levels around No. 3 shaft are now claiming, with those previously noticed over the 13th level west of No. 4, especial attention.....At the National a very noticeable improvement has just occurred on the 5th level west, and Middle vein. The level has showed well for some distance, but they now have a mass of fair proportions, and *growing*—as we often say—when last heard from. Other parts of the mine are yielding about the usual quantity of minerals.....The *Miner*, while alluding to an article—copied by the Superior *Chronicle*, from the Journal of Mining, (New York,) but attributed to "the San Francisco *Mining Journal*"—headed, "Mining Reduced to a Certainty—Remarkable Results," (see page, vol. 1, Journal of Mining,) says: "Around Vermillion Lake, up the St. Louis river, and on the north shore are veins of quartz without number, which worked, as the quartz veins of Australia are worked, would yield a profit annually of from 50 to 100 per cent. upon an ordinary mining capital. Prices of labor and provisions can not be more here than there; nor can the cost of machinery be greater. Under these circumstances, we should think that it would be better for the Secretary of the Treasury to devote a portion of the appropriation made by the last Congress towards obtaining information from the Australian mines, than in gathering statistics of the mineral resources of our own mines..... We condense from the Commercial *Bulletin* two long and interesting sketches of the Lake Superior Copper mines, by a recent visitor, as follows: The Minnesota mines, in Ontonagon district, dating from 1845, was the first mine opened by modern miners in Michigan. It is remarkable for the quantities of native silver found with the copper, and which, when sent over to the European markets, fetched an extra price on that account. The product consisted of mass copper, and paid large yearly dividends, but some two or three years ago the mass copper failed suddenly, and with it the dividends. Stamping machinery and assessments being substituted. The National and Rockland adjoin the Minnesota, and are flourishing mass mines. The National paid a small dividend for several years, but has met with many misfortunes from fire and flood and drought, but is said now to be working very satisfactorily, with some prospect of renewed dividends. A good plank road conveys the copper from the district to Ontonagon. Forty miles east is Eagle river, the shipping port of the Phœnix Cliff and other mines. The roadstead is open and exposed to the north; a long pile pier and a warehouse are the principal features of the village, in which is also located the water-proof fuse factory of Messrs. Wren, Dunstan & Bright, who manufacture six miles of their fuse per day, and of which they sell $24,000 in value per annum—the work of two of the partners and two girls. The Phœnix is one of the olders mines of the district, and has been extensively worked. Some two years since masses of copper were discovered on the old Phœnix vein, in close approximation to the Bay State, in consequence of which was a sudden and large increase in the stocks of both; nothing, however, remains of these prospects at present—but the retrospect exhibits numerous assessments, and give houses and other surface improvements. The Garden City is the only mine worked by Western capital; the stockholders being mostly located in Chicago, it has not met with success. The Cliff is the most extensive mine in the country, and one of the earliest worked. It is situated at the foot of a perpendicular bluff. Its machinery is said to be of the most durable kind, and suitable to the purposes for which it is used. The men are said to work at a nominal wages, on account of the large quantity of silver found and appropriated by them in the mine. The product for the month of June was 120 tons mineral, equal to 90 tons ingot copper, worth $54,000, while the cost sheet was but $18,000. The Cliff is a mass mine, and the masses are of an extraordinary size. Several years ago one was thrown down which weighed 300 tons. The St. Clair, a small mine lately commenced, is in the vicinity, and pays its way. The Manhattan, American and North Cliff, are locations set off from the Cliff; operations upon them are at present suspended. Eagle Harbor is eight or ten miles from Eagle river, and might be made one of the best harbors on the coast. It is the shipping port for the Copper Falls and for Central Mining Companies. The Copper Falls had

paid but one dividend in twenty years, but now shows signs of success. Some two years ago the old Cornish Stamp Mill was superseded by improved machinery—Ball's Stamp—which crush and wash about 130 tons of rock per day. Within the past year, a change has come over the character of the mine. In the 120 fathoms level a transverse vein was cut, which promises to be one of the richest and most continuous ever opened. Since the commencement of the year, 300 tons have been taken from a very small space of ground, perhaps 150 feet in length, and in the month of June a large amount was reported still exposed in the back and breast. At that time a large mass was being cut up, and another, hanging from the roof, had about 10 tons exposed, judging from which it might be supposed to weigh twice that amount. The present appearance indicates that 100 tons per month, for some months to come, would not be an extravagant estimate of the quantity the mine might be expected to yield. The buildings on the location are plain but substantial. As an evidence of the rapid consumption of wood, it may be interesting to mention that, at the time operations were first commenced at Copper Falls, the whole country was covered with a dense forest, but now the whole 1,600 acres owned by the company have been cut and burned, and coal has to be imported from Ohio for the supply of the engines. The Petherick mine was formerly a portion of the Copper Falls, but little work has been done on it, and that with little result. About a mile and a-half further west is the Humboldt location, which is only remarkable for having a very good and comfortable agent's house situated upon it, but which is at present unoccupied. All the preceding mines referred to are principally owned in Boston. The Central, the next of importance on our list, is nearly all owned in New York. This is situated on the south side of the Green Stone, about five miles from Eagle Harbor. This mine was worked for several years, with the usual promise and disappointment. Within five or six years the operations have been much more successful, and it stands now second only to the Cliff. For the year past a great difficulty has been found in opening the mine, on account of mass copper, of which the vein has been really too full to allow it to be worked profitably. In sinking the shaft, large masses would be discovered lying at the bottom, which could not be got at or passed, without going around them—or, as the miners say, out into the country. Since the mine has been more thoroughly opened, the yield has been uncommonly regular and profitable, the product averaging, at the present time, 100 tons per month. There is one of the best hoisting and pumping engines on the Lake at the Central, and a very large stamp mill, the last having seventy-two heads of Cornish stamps, and buddles, or washing floors. The Central has paid $150,000 in dividends, while the assessments on the stock have been but $5 a share—$100,000. At the present time the mine is energetically and systematically worked, and has every evidence of being constantly remunerative. Going from the Central to the Amygdaloid, we pass the following mines: North Western, Dana, Madison, Sussex, Middlesex and Essex. The former was one of the earliest worked in this range. It was well provided with good engines and buildings, and a fine farm; but after sinking 220,000 in it, as assessments, besides all the proceeds of the copper taken out, the mine was abandoned as unprofitable. The Madison still exhibits some signs of life, being worked on tribute. The road leading through these mines reminds one of the country roads of New England—the clearings are older and the meadows are well covered with grass. This section of Keeweenaw Point is capable of raising all the hay required for the use of the mines. The Amygdaloid has had $340,000 expended on the mines besides the proceeds of the copper raised, but up to the present time this is the only result, as far as the shareholders are concerned. Three-quarters of a mile further on we come to the Delaware and the Pennsylvania, both extravagant in their surface improvements, but lamentable failures, as far as mining is concerned. After the expenditure of nearly a million of dollars, the mines are hopelessly in debt, with 125 tons of copper locked up in the smelting house, in the sheriff's hands Copper Harbor, the only good post on the north side of the peninsula, was formerly a place of importance, but at present all the mines have stopped operations. From Eagle river, the starting point, to this place, are located 45 mines, upon which $5,000,000 have been expended or raised in assessments. Ten only of these mines are now in operation. Fifteen miles from Eagle river lie the abandoned locations of the New York and Seneca mines in the Portage Lake District. Upon the former of these much money and labor has been expended, but with little or no prospect for the future. Some $20,000 have been laid out upon the Seneca, and it is thought, by practical men, to be worth further examination. A ride of about five miles from the half way house, brings us to the Calumet mine, which at this early stage—it being less than a year since the first discoveries were made upon the location—gives indication of being one of the most important and flourishing in the region.

Nevada.

The Comstock.—From the *Enterprise*, up to Aug. 31, we take the following: The new shaft of the Empire and Imperial companies in the upper part of Gold Hill, near the Divide, has now attained the depth of 530 feet.....The Savage mine in this city yields at the rate of over 1000 tons of ore per week, worth nearly $50 per ton. The new body of ore found at the sixth level is now about ten feet in width, and looks very promising.....The Yellow Jacket mine is said to be yielding and looking better than at any period since it was first opened. It is one of the best, if not the best mine on the Comstock ledge.....The Rhode Island mill, at Gold Hill, commenced running again on the 21st instant, on ore from the Crown Point mine, and works admirably, as it always did..... Relative to the recent strike of ore made while sinking a ventilating incline from the second to the third levels of the Gould & Curry mine, that paper says: The ore is very fine, more like sand than rock, and will probably yield between two and three hundred dollars to the ton. The extent of this ore is not yet known, but there are flattering indications of the existence of a good body of it below. A drift is being run from this level, 700 feet below the level of D street, in the direction of this body of ore, which will probably intercept it some of these fine days. This strike of rich ore is highly encouraging and of significant importance from the fact that it is obtained from a greater depth than ever before, all below that having been found to be but a very low grade of ore..... The croppings of the Gould & Curry are also being worked—ten tons of good pay ore per day being extracted. Some two hundred feet in length of these croppings have been worked thus far, the pay streak narrowing from fifteen feet in width, as it is worked towards the south down to four or five feet in width. It has been worked some thirty or forty feet deep, and there are perhaps over a thousand tons left yet to be extracted before reaching the point where the mine has been worked beneath. The old original tunnel of the mine, which was run in 1860, extends west from just above B street back to the ledge, which it cuts at the depth of sixty or seventy feet. This tunnel was not timbered and has stood very well, until of late. Owing to its commencing to cave somewhat, it was thought best to secure it, therefore it has been timbered throughout in a very neat and substantial manner. From the level of the tunnel drifts are run both north and south for the extraction of ore, and everywhere the mine is strongly timbered and the worked out places filled in and secured in the most thoroughly systematic and workmanlike manner. Chutes connect with this tunnel, down which the ore from above is dumped by means of wheelbarrows, and taken in cars through the tunnel to the dump on B street, whence it is hauled to the Gould & Curry mill. This ore contains a large proportion of gold, fine particles of which are plainly visible to the naked eye. It yields under the stamps over $50 per ton, and pays the better in comparison with that from the lower workings of the mine, in that it costs comparatively little to mine it out, there being no deep shafts or pumping and hoisting to do in the matter. These upper reserves, too, have come in excellent play, while the lower workings of the mine have been yielding so little rich ore as compared with past productions.....The Gold Hill *News*, Sept 1, says: The shipment of bullion from Gold Hill, by Wells, Fargo & Co.'s Express, during the month of August, amounts to 352 bars and 18 sacks, valued at $692,134 28. To this should be added $80,000 worth of bullion sent to Virginia assayers by the Yellow Jacket company, and shipped from the express office in that city. This aggregates $772,134 28 as the August yield of Gold Hill mines, so far as assays indicate. This is the largest monthly shipment ever made: but it is confidently expected it will be the smallest of the last five months of 1866. The yearly average it ciphers exceeds nine millions of dollars. Is it necessary to call attention, in so many words, to the fact that the Gold Hill mines are giving out?

Humboldt.—The *Register*, Aug. 25, says: We are pleased to add to the list another valuable gold mine in Humboldt—the "Andy Johnson—located in Table mountain, thirty miles south of Unionville. We are put in possession of the following facts concerning it: Work has been progressing rapidly under the supervision of J. M. Bailey, for the last six weeks. A tunnel run in on the vein, a distance of fifty feet, exhibits a well-defined gold-bearing lode of an average width of sixteen inches, which pays handsomely throughout the entire vein, even with the slow process of an arrastra. Fifty feet in, a very rich pocket has been struck; at which point a shaft is now being sunk, following the vein. Judging from the general yield of the ore taken out of the tunnel, it is believed the ore from this pocket will pay several hundred dollars per ton. Several tons of this character of ore are now on the dump.....At Star City W. D. Robertson is vigorously prosecuting work in the Yankee—running night and day. Tunnel in four hundred and fifty feet..... The American Basin company continues its work with usual energy. Tunnel in seven hundred and fifty feet. All signs indicate that the ledge is near at hand..... R. McBeth was in Star, yesterday, having with him some specimens of ore taken from a ledge upon which he is now working, in Santa Clara district. He is at present employed in taking out ore from this ledge for the purpose of having it worked at Faulkner's mill.

Empire.—The Nye county *News*, Aug. 18, says: We mentioned a week or two since that Joe Sabon and party had located three fine ledges in the neighborhood of the celebrated Hot Creek district, and about five miles west of the Old Dominion ledge. We have since learned that the district has been organized under the name of the Empire district, and that Joe Sabon has been elected Recorder. There are many good ledges in this district, and the formation and character of the ledges is similar to that of Hot Creek. The country to the east and south of us is being very thoroughly prospected, and so many new districts are being organized that it is almost impossible to learn the names of all.

Mammoth.—The Ione *News* learns that several tests of ore have been made by Jones' three-stamp mill, in Mammoth district, with an average result of $70 per ton. The ledges of Mammoth are wide and permanent, and as they contain an abundance of ore, this may be considered a pretty good test of their value. A lot of seven hundred pounds of ore from the Vigilance ledge was worked at this mill last week, and yielded at the rate of $111 70 per ton.

Northumberland.—The *Reveille* says: The Northumberland district is likely to rank with the foremost in the region. Its ledges are large and well loaded with superior mineral. Hank Butterfield returned from the district a few days ago, after having discovered a ledge of giant proportions, a sample of the ore from which, as assayed by J. R. Murphy, yielded at the rate of $1,980 62 of silver per ton.

Philadelphia.—The crude bullion brought in from the Philadelphia district by Col. D. E. Buel, says the Austin *Reveille*, yielded beyond the expectations of the most sanguine, both as regards its fineness and value. The bullion weighed 3,855 ounces, which, after being melted, yielded four bars valued at $3,648 09, and of the following fineness: No. 1. 748; No. 2. 764; No. 3, 803; No 4, 812. This amount of bullion was obtained from fourteen tons of ore, which was crushed wet and treated without roasting, and yielded an average of over $260 per ton. We learn from Mr. J. M. Dorsey, who assisted in the reduction of the ore, that it was worked up to seventy per cent., as was shown by repeated assays of the pulp.

Lander Hill.—The superintendent of the Morgan and Muncey, says the *Reveille* of Aug. 25, is pushing down the incline, opening an avenue for systematic and extensive working of the mine. In the meantime levels are being run from the incline, which will enable them to extract a large amount of good ore daily, and there is no doubt that when these excavations are partially completed, the large vein will afford labor for a good number of workmen. The machinery on the mine is very efficient .....At the Old Colony mine it is the intention of the superintendent to push the incline to a considerable depth—perhaps five or six hundred feet—affording an opening for running a number of levels. When that depth shall have been obtained, a half dozen levels, branching off from either side of the incline, will open the way for scores of busy miners to extract the ore from the vein of the Old Colony .....It has hitherto been found difficult to reduce the refractory ore obtained from the Providential mine. The bullion produced was invariably of the lowest grade, ranging from 140 to 350 fine, and the bars resembled copper rather than silver. We saw a bar yesterday at the assay office of David Lundbom, weighing 772 ounces, and of the remarkable fineness of 990. It was produced at the company's mill at Big Creek, where they have expended much labor and ingenuity in overcoming the rebellious character of the ore, and bringing the bullion up to a high grade. It would appear that they had been successful. After the ore is roasted it is worked in iron pans having their bottoms lined with stone four inches thick, by which 63 per cent. of the silver is obtained. The residue is then worked in iron pans, with a further yield of 25 per cent., giving a total yield of 88 per cent. This is beyond the average. By using stone bottoms, however, insufficient heat is applied to the pulp, and it is proposed to obviate this by boring holes in the bottoms of the pans, and admitting the steam between the iron and the stone.

Idaho.

The Boise City *Statesman*, July 31st, contains the following: A letter from Idaho City, of the 27th, says: I had the pleasure a few days ago of mounting a thorough bred steed, headed for the mines belonging to the Golden Reef Mining Company, J. A. Middleton, Agent, and E. Metz, Superintendent, located on the divide between Elk and Grimes creeks, and about seven miles distant from Idaho City. The mill is located on Deer Creek, a tributary of Elk. The buildings, mill, dwelling, office and shop, are all substantially built. Ten stamps are constantly kept running on ore from the Buffalo ledge, which yields satisfactorily. The "Buffalo Ledge" tunnel is on the east side of the divide; 125 feet to a shaft of 80 feet in depth; from thence a continuance. From the shaft of 90 feet on the west side of the divide, a tunnel of 125 feet is run on the ledge. Another tunnel is commenced, which will, when completed, tap the ledge at a depth of 200 feet below the surface. Ledge from 3 to 4½ feet wide. The "Stevens Ledge" is over 30 inches wide, and has a shaft on it of over 135 feet, with two drifts of 46 to 60 feet wide. The "Golden

Reef No. 1," is 30 inches wide; has a shaft on it of 30 feet, with bottom drift on the same distance. The next opening will be over 60 feet from the surface. The "Golden Reef No. 2" is a ledge of 60 feet in width, of a talcose nature—the pay rock lying in deposits of a spider-web nature. The tunnel on this ledge is 170 feet in length, drifted at right angles 60 feet to a ledge, and continued along foot wall 40 feet, and along the hanging wall 30 feet. The "Golden Reef No. 3" is 4 feet wide; shaft 30 feet. The "Lucky Bill" is a new ledge, and has a shaft of 30 feet on it. One ton of the rock has been crushed which yielded $34. The ores from the various ledges have yielded as follows: Buffalo, $30 per ton; Stevens, $35; Golden Reef, $42. The above mines are beyond a doubt a success. Everything required to prosecute the work and crown the efforts of their enterprising agent with success is at hand. A good road, connecting with the stage road between Idaho and Centerville, and complete roads leading from the mill to the various mines. Wood in abundance, of the best quality. Water the whole year round without expense. Mr. Motz informed me that they have seventeen men at work, but intend to increase the number to thirty. He estimates that the expense of extracting, delivering and reducing the ore is only $10 per ton, notwithstanding the high price of labor and subsistence. The distance from the mill to the several mines is three-quarters of a mile. Other mills are in operation in this vicinity. The Illinois and Gambrinus ledges are constantly worked with success. Others are being prepared to receive machinery which is on the road from the east. The creek claims are in full blast, and will continue so until interfered with by Jack Frost.... The Ruby City *Avalanche*, July 28th, contains the following: In the "Poorman" there are thirty odd men engaged in taking out ore and the number will be increased. .... The "Richman Ledge" is located on the north side of War Eagle and has a north and south course, as nearly all do. It was discovered some months ago, but until recently nothing was done towards its development. A tunnel is being driven in the discovery and a shaft on the first extension north. A ledge of decomposed and solid quartz intermingled with granite can now be seen. At the further end of the cut the granite is giving way and more solid quartz is showing itself. The decomposed quartz is full of free gold which is easily obtained by panning.... The "Trook and Jennings" is being prospected by the New York and Astor Company. The old shaft is being cleaned out and a new one is being sunk about seventy-five feet north of the old one. The latter is already down fifty feet and the ledge is one foot wide.... The Morning Star, Second South Extension, is also undergoing a sensible prospect by the same company. They will sink the present shaft to a depth of one hundred feet. They are down over forty feet now and taking out some very rich ore. The ledge is narrow, but we are informed that it is increasing in size. The rock is rich enough—the quantity is the only point to be established by prospecting.... The Cosmos company have procured an interest in the Carrico and Varney ledge. Miners are engaged in sinking on the ledge and taking out ore.... Colonel Fogus expects to erect a quartz mill in the Flint district this fall, and is now increasing his laboring force in that district. Mr. Black is expected with his five-stamp mill in a few weeks, and will have it in operation as quickly thereafter as possible. Several more ledges have recently been discovered—among them a very large and rich one by Fred. Warnkee and Swart. It is reported to be seven feet of solid quartz, with a streak of almost pure black sulphurets of silver. The seam is about four inches in width.... The N. Y. & O. Co. are enlarging the settling capacity of their mill. There will be eight more settlers added, and the building enlarged to make ample room. For a time to come, the mill will run on Poorman's rock; also, the Grenzeback.... With but few exceptions, the Chinamen have possession of the creek and are working it for several miles, between Ruby and Wagontown. This is at least three miles further down than any white men have worked it since we've been in the country.... At no period in the history of Owyhee has there been so much real labor done on ledges as at this time. There are hundreds of men aside from organized companies, thus employed that the public know nothing about. The Cosmos company must have fully one hundred men engaged in mines; the New York & Owyhee company half as many—probably more; the New York & Astor company nearly fifty; the Lincoln forty or fifty; the Surplus Oro Fino as many; and Moore & Fogus about one hundred and fifty. The War Eagle company have let a contract and men are sinking a shaft on their purchase—the Revenue. There is a large amount of building being done, but when we wish to get revived up a little in a business way, we get out in the gulches and on the mountains and *see* the earnest men at work on the ledges—upon which every other interest depends. The building of mills, houses, &c., is in vain unless a corresponding activity pervades the mining interest. Everything looks hopeful. The more thoroughly men examine the veins of Owyhee county, the more sanguine they are of their richness. It requires a great deal of time and much money to get a quartz mining camp to be fully as prosperous as appearances indicate.... Specimens of Owyhee quartz and native silver will be exhibited at the Great Paris Exposition of January, 1867. There will be specimens of Poorman ore forwarded which will be the wonder of the assembled representatives from every part of the world. It requires a sight at many things to convince the incredulous, but the specimens that will be on exhibition in Paris will open the optics and convince the mind of many a Johnny Bull and Frog-eater of the riches of Owyhee.... We learn from Mr. Thomas Hart, says an Idaho paper, that deep diggings have been struck near Placerville, by tunneling the hill between Boyle's gulch and Ophir Creek, near the Placerville and Idaho City stage road. Tunnels have been run in from each side of the hill, and fine pay gravel is found, from four to six feet deep, at a depth of sixty feet from the surface, that pays from fifty cents to one dollar and fifty cents to the pan. The distance between the pay dirt, as found on each side of the hill, is about one thousand feet, and that is supposed to be the width of the gravel. Mr. Hart has been in the tunnel at each end, and tested the richness of the pay dirt, or gravel, and compares it to the rich diggings of China Corral, California, only the gravel here is deeper. Two other tunnels have been run into the same hill, higher up, and struck the same kind of pay dirt. This gives great encouragement to the Placerville camp, and the mines have already begun to tunnel California Hill. The excitement for hill diggings is already extending over the basin. They are already forming companies in Idaho City to tunnel the hills in that locality. Should this kind of diggings prove extensive through the hills of Boise Basin, it will double the prospects of the placer mines in that county.... J. Marion Moore has sold his interest in this basin, says the *Union*, to one of his partners for $45,000.... The *Statesman* speaks of a $230 nugget recently taken out of John Sweek's claim in Alturas county. The claim lies in Quartz Gulch between the celebrated Atlanta and Leonora ledges. This chunk is valued at about seventeen dollars per ounce. Several smaller nuggets were found in the same claim.... A Portland (Oregon) exchange speaks of an Idaho (Boise Basin) company which brought the mill—ten-stamps—which they are at present using, from Chicago, Ill., overland, but they are now about to ship additional machinery from the East, *via* the Isthmus and Portland. The ten-stamps are kept busy on rock that pays expenses, and affords the Treasurer a supply of $1,000 per week to be remitted to the holders of the stock. .... The Idaho City *Union*, July 31st, says: I. B. Mathewson cleaned up last week in his claims on Moore's Creek after six days run $7,000. The expenses during that time were $2,100. The greatest amount taken out in one day was $3,500. The greatest amount from one sluice in one day was $2,145. Mathewson works 90 hands now. He has been working 130.

Oregon.

The Dalles *Mountaineer* of Aug. 17th says: From the merchants who arrived here on Wednesday from Lewiston, to purchase stocks of goods, we learn that there has been quite a brisk trade in that town during the summer. The discovery of rich silver quartz in the vicinity of Warren's Diggings has caused considerable excitement in that vicinity. A number of men left Lewiston with Mr. Hurley, assayer, to prospect the lead, and were expected to return in a short time, when correct accounts of the richness and extent of the mines will be made known..... The *Statesman* says: Last week Mr. Comegys showed us the first effort in the way of procuring pig lead from the Santiam mines. From about seven pounds of ore, they extracted between five and six pounds of pure lead, but for the want of proper implements the most of the lead was wasted. What has been done is ample proof of the practicability of smelting lead from the ore of the "Sherman Lead." The lead, as stated before, contains a handsome per centage of silver, and altogether, we regard the mine as a valuable one ..... From Mr. Gardner, just down from the Santiam, we learn that the prospects continue flattering. Fifty tons of rock from the Santiam's company's tunnels had been put through, and he was confident the yield would not fall short of twenty dollars per ton. The Santiam is bound to come out strong yet. The perfect confidence of such experienced miners as Mr. Gardner is not to be lightly passed over ... The Jacksonville *Sentinel* says: Buffman & Co., on Canyon Creek, have just finished an arastra. Their vein is still very rich. Some say they have a ton of gold in sight. It is certainly one of the richest veins ever discovered in this section of country.....At Galice Creek, everything is in a flourishing condition. The miners are making preparations for an active raid on the treasures of mother earth this fall and winter.....The following from a letter from Mr. Waldron of the Exploring party sent out to prospect Canyon Creek, is from the *Columbian*: I beg leave to make you the following report of the proceedings of our party of five men. We left this place on the 21st of June and reached Hixon's Creek on the 26th instant. Of course we found it necessary in the first place to saw lumber for sluices and to construct a ditch to bring water on our claim. Owing to to the scarcity of all kinds of tools the latter work occupied us ten days, although only one-fourth of a mile in length. The original ditch made by Mr. Hixon's party had, in his absence, become completely filled up. Owing to the presence of snow and ice on the ground, we found it almost impossible to keep our new ditch in order, and having left the water running during one night in a break which occurred, I found in the morning prospects of $1 to 1 25 to the pan. We therefore commenced work in that spot, and in a space of ground about 10 by 25 feet, in less than a day's work we washed out $76. The other work which we had done had yielded well, and our whole results amounted to $270. Estimating the actual number of days work to realize this, we found our pay amounted to $17 per day to the man. Under favorable circumstances and with hydraulic pipe, with our present prospects, I think the ground will pay $50 a day to the hand. When I left, the "face" of our claim was about six feet high and paid from the surface down. The Blue Lead company, of seven men under the management of Mr. Shepherd, joining us on the upper side, have not yet commenced washing. Their dirt prospects from three to five bits to the pan. They are bringing in their ditch twenty feet higher than ours, and will probably have it completed in about eight days. The Go-a-head company are about a half a mile above the Blue Lead company, and have struck a prospect of four bits to the pan on slate bed rock. Up to this company the whole of the bed rock consists of a rather soft sandstone, and it is my opinion that it is not solid, but that a second layer of gravel will be found beneath it. These are all the companies at present located. Specimens of gold-bearing quartz are to be met with on all sides. We have a few specimens with us in which the gold is visible in every part. Several of the veins are apparently well defined, and will in my opinion eventually form the most permanent and valuable leads of gold in the country. In conclusion I can only say that I have the utmost confidence in the prospects of the creek.....The *Oregonian* Aug. 11th says: A gentleman just down from Union county informs us that the Eagle Creek quartz mines are developing richly. A ton of rock from one of the ledges crushed by an arastra, yielded $113. Other ledges prospect quite as well, and the Eagle Creek miners feel confident that they have mines second but little to those of Owyhee.....The Occidental Mill company will erect their mill on the Davenport ledge on Jackson Creek, instead of on the "Swinden" as at first intended.....The Jacksonville *Sentinel* says: Work has been resumed on the Davenport tunnel, and from indications it is thought that the workmen cannot be far from the lead. The rock through which the tunnel is being run is very hard, and but a few inches can be drilled per day.....There is quite an excitement in Josephine county, about a new quartz vein, recently discovered on Rogue River, about two and a half miles or three miles below Vannoy's Ferry. It is situated above what is known as Evans' Diggings, where he mined some four years ago. On the surface, the ledge appeared to be divided into two seams, and each is nearly four feet wide.....The *Mountaineer* tells of an 85 pound lump recently taken from Olive Creek, that contained 50 pounds pure gold.

Colorado.

At a miner's meeting held at Peru in the Snake River region, August 31st, it was resolved to detect and bring to justice "all persons who feloniously remove, displace, or deface any claimstake or stakes in this district."... The Denver *News*, September 12th, says: We have specimens from the Hattie Jane and Yosemite lodes, situated north of the Arkansas river, near Red Mountain district. These specimens, by a free gold assay—crushing and panning—yield eight ounces to the ton. Ten tons of the ore make a cord. The ore is, apparently, an oxide of iron, in which the gold is plainly discernible and freely diffused. The assayer thinks that an assay of the pyrites, contained in the ore, will increase the yield to twenty ounces per ton. .... Times are improving in the Snake River mining region.... The Snake River has three main branches. The first discoveries were made on the South fork, where leads were staked as long ago as four or five years. Their value, however, was unknown, and no attempt was made to develop or test them until late in the fall of 1864. In the spring of 1865 quite a number of prospectors pushed out in that direction, and during the summer a great many leads were discovered. Some of them are of marvelous richness; specimens of ore having been tested which give more than two-thirds their gross weight in pure silver. This metal largely predominates; but few veins showing a paying percentage of gold. Since the summer of 1865 the attention of prospectors has been chiefly directed to the middle fork of Snake river. On it is Peru district, which, in fact, includes the entire stream from source to mouth, with all its tributaries. Its length is perhaps seven miles and its width half that extent. It is completely enclosed, except on the lower or western end, by snow-crested mountains, and the upper three miles is a perfect amphitheatre in shape; known among the miners as "the Horse-shoe." At the extreme point rises Gray's Peak, one of the loftiest summits in the Rocky Mountain range. Gray's Peak and all its spurs contain a perfect net-work of silver veins. Whilst many of them are almost inaccessible, so far as practical working is concerned, there are many others low down and easily reached. In fact, considering the great altitude, most parts of the district are remarkably easy of access. Immediately around and above Peru—which is almost at the upper verge of timber growth—there are from fifty to one

hundred known and well defined leads to which a team and wagon can be driven without having to construct any road, except to remove a few stones here and there, at long intervals. From twenty-five to sixty men have been at work in Peru district for the last two or three months; most of them have been prospecting, but a few are engaged in developing property acquired last year. Next season reduction works will doubtless be established, and, if properly done and energetically conducted, Snake river will render an account equal, if not superior, to that of any other portion of Colorado. On the South Fork, five miles from Peru, Hon. John T. Lynch has already erected a furnace for smelting ores. At the time of our visit he had not yet begun operations, although completed and in readiness to do so as soon as the ores were prepared. Since our return we learn that one or two runs have been made and with the most flattering success.... From the Central City *Register*, September 11th, the following items are taken: Prof. Carpenter has succeeded in amalgamating the gold contained in the tailings treated, to within two dollars per ton of the amount shown to exist in the ore by assay. After amalgamating, considerable free gold was found to remain, which repelled the quicksilver, but which was saved by panning. This brings up the result nearly or quite to the fire assay. He is running a furnace in the McIntyre mill daily, where everybody can see the operations and have proposed changes explained.... Georgetown is flourishing. Messrs. Smith & Herrick have commenced hauling the materials for their smelting works. J. W. Watson has the stack to his works nearly completed. The Messrs. Stowell are reported to be running their Scotch hearth successfully, turning out a considerable amount of pure lead.... We learn from Mr. Reno, who is just in from Snake river, that one run has been made in the Buffalo company's furnace, at Montezuma, with exactly the results we predicted. The furnace was fired up too rapidly, when the ore melted and ran down as a sub-sulphide, and when drawn off in pots, crystallized as a galena. The result is not to be regarded as a failure, but simply as a lack of skill.

California.

Nevada.—The Grass Valley *Union* publishes the following statistics relative to the quartz mills in Grass Valley:

	STAMPS.
Allison Ranch, steam	12
Alta Company, No. 1, cement	8
Byers', water-power	8
Cambridge, steam	10
Coe Company, centrifugal crusher	..
Empire Co., old steam mill	6
Empire Co., new steam mill	30
Eureka, steam	20
Forest Springs, water-power	10
Galena, steam	4
Gold Hill, steam	20
Hartery, steam	8
Ione, steam	10
Lady Franklin, steam	8
Laton & Sons, steam	8
Larimer's, water-power	9
Merrimac, steam	10
North Star, steam	16
Orleans, steam	8
Pacific Ore and Reduction Works, steam	4
Perrins', water-power	5
Rocky Bar, steam	16
Sebastopol, steam	12
Stockton's, arastra	..
Town Talk, cement	8
Union Hill, steam	20
Woodworth's, steam	15
Total number of stamps	285

It will thus be seen that we have 27 mills in Grass Valley Township at the present time, nearly all of which are running, a few being idle for repairs, the total number of stamps, as already stated, being 285. The Lucky mill, which is to run 15 stamps, will be completed in a few weeks, when we will have 28 mills, running in the aggregate the even number of 300 stamps. Two quartz mills, the North Star and the French mill, have been torn down during the present season. The mills recently constructed are the Ione, Hartery, new North Star, Union Hill, Cambridge and Pacific Ore and Reduction Works. The table given above we submit to the careful attention of our intelligent readers, who can form from it something of a correct estimate of the wonderful quartz interest of this township. At least six more quartz mills will be constructed about Grass Valley before another year, this number of companies being engaged in opening an equal number of promising mines, each company of which will require a mill to crush its own rock. .....The Nevada *Transcript* to August 29th contains the following: The mill erected by the Hawley Bros., upon the Eureka claim at Grizzly Ridge, has been completed, and was run several days last week on trial. It will soon commence for steady work. A large amount of rock from the Eureka is upon the surface, and the new mill will be kept constantly employed. They are taking out very rich sulphuret rock from the head of the drift.....Murchie Bros. have struck Big Blue ledge rich near their mill on Deer creek. The rock is of a dark blue color, and contains a large amount of rich-looking sulphurets. When subjected to heat, the gold shows itself in the sulphurets all through the rock. The shaft is 90 feet below the surface, and they have run across the ledge a distance of 10 feet without getting through it. A very low grade of ore with such a ledge would be a fortune.....The North Star company, whose claims are located about two and a half miles from town, on the Blue Tent road, took out a pan of gravel a few days since from which $40 in gold was taken..... Whigham ledge is yielding some excellent rock, which is being worked at the French mill, and is paying between $130 and $150 per ton. The mill is crushing from five to seven tons a day .....Along the Yuba river, Canon and Diamond creeks, a number of large ledges crop out. They are all of great width, and, as far as prospected, give indications of richness.

Sierra.—Petroleum has been discovered in the southern part of this county. Claims are being rapidly taken up.....The *Messenger* says: The result of the Sailor company's last run exceeded their expectations. The tunnel, as it progresses into the hill, daily develops more rich rock.....Jack Alderson & Co.'s hydraulic diggings are cleaning up with every prospect of good pay. Gold is sprinkled pleatifully along their ground-sluices, besides they picked up over $2,000 in nuggets, before setting their boxes. .....The Oro claim is to be re-opened.....The Montpelier claim cleaned up on Monday last, after a run of twelve tons of Good Hope rock, and found that it paid over $25 to the ton.....We saw at the bank of H. Seammon, a few days since, a specimen of gold-bearing quartz. The lump weighs 159 ounces, and good judges say there is not more than three pounds of quartz. The piece was found about two feet below the surface in French ravine, just below the mouth of Wet Ravine.

Calaveras.—From the *Chronicle* we take the following: Meekly we submit a brief description of a few "bunches" situated within one mile of West Point: Chas. Ghoulson & Co., width of vein, 2 feet; depth, 50 feet; length of bunch, 100 feet. Two hundred feet south of this, discovered bunch No. 2 last Saturday; width of vein, 2 feet; depth, 100 feet; better quartz than bunch No. 1, worth $120 per ton. Johnson & Willis: width of vein, 1 foot; depth, 30 feet; length of bunch, 30 feet; $140 per ton. Hare & Valencia: width of vein, 1 foot; depth, 30 feet; length of bunch, 40 feet; $50 per ton. Lenhard & Co.: width of vein, 2 feet; depth, 25 feet; length of bunch, 90 feet (drifting); $60 per ton. Chino & Cruz: width of vein, 1½ feet; depth, 60 feet; length of bunch, 45 feet; $80 per ton. Reed & Hillary: width of vein, 2 feet; $70 per ton. Baggalupi & Co.: width of vein, 20 inches; depth, 45 feet; $60 per ton. Reed & Co.: width of vein, 15 inches; depth, 80 feet; $46 per ton. The above are only a part of our paying quartz veins; time prevents mentioning many others at present. Last Saturday Mr. F. Morris discovered a vein in the bed of Bear creek, which promises to be a "peculiar spot." It is three feet wide, and will average over $100 per ton. The writer saw a piece of quartz, taken from the vein three feet deep, weighing 1½ pounds; offered $20 for it, and was refused.

Yuba.—The Marysville *Appeal* says: The Blue Gravel company, at Smartsville, Yuba county, cleaned up last Tuesday, after thirty days' run, nearly $30,000. .....The Pennsylvania mining company, Brown's Valley, has just crushed 110 tons of their quartz, yielding $3,400, or $31 to the ton. This result, besides placing the finances of the company in a most healthy condition, is, however, chiefly of great importance as it shows so rapid and marked improvement, in regard to the richness of the rock. The ledge is twelve feet in width.

Inyo.—Lieut Hepburn, just from Owen's river, reports the mines in that locality very rich and successfully worked.

El Dorado.—A correspondent writes: I am fully convinced that the entire divide between the South and Middle Fork of the American river is one vast body of quartz, which in time will be prolific in wealth. I have just been shown a splendid prospect, taken from one pound of quartz from a shaft thirty feet deep, on what is supposed to be an extension of the Collins' lead. This claim is owned by Dr. Stone and R. Murphy. Twenty-five cents was obtained from one pound of this rock.

Arizona.

Jonathan Gavett, writes of the copper mines of Arizona as follows: Those lodes are found in a formation resembling, in structure, the "Sierra Madre" of Mexico, and evidently a continuation of the same. They are, for the most part, true fissure veins of great size; yet it is not unfrequent to find what appears to be an immense inter-stratification, forced to the surface by eruptive action, showing outcrops of rich ore unparalleled in extent. The ore does not differ materially through the whole district, the surface uniformly showing blue and green carbonates, oxydes and silicates, which, at a depth of about 50 feet, run into vitreous copper, or grey sulphurets. The surface ore varies from 65 p. c. to 80 p. c. of copper in assay, while the grey sulphurets will range from 50 to 70 p. c. Most of those ores carry silver frequently in a very high ratio, so that many of them would come under the head of silver mines. The yellow sulphuret has been found only in small quantities. The history of copper mining does not show any such magnificent deposits of high grade ores. In comparison with them the European mines are insignificant. No such low grade ore, as the highest grade of ore produced in Europe, is found in Arizona, and, if found, would, as in Copperopolis, California, be laid aside as of no value. It would seem as if these deposits were designed to accompany the yellow sulphurets of California, to form the assortment desired by copper smelters, and to secure for our Pacific coast the most prominent position in the copper production of the world. The Colorado River is navigable by steamboats and barges, for five hundred miles, while large ships lie at its mouth, within fifty miles of which are the chief copper mines and near the river.....An article in the San Francisco *Miner*, states that the copper ores of Arizona are of a peculiar character. They resemble and are somewhat identical with the best of Chilian ores, which are the richest in the world. They consist of oxydes, carbonates and grey sulphurets, with other ores which yield a very high percentage. They are also of great mercantile value as a flux in the reduction of the yellow sulphurets. Indications exist everywhere within the district, of immense quantities of these valuable ores Not confined to lodes, so far as known (although veins are found of great size,) masses are dispersed everywhere. The veins are, in the present state of knowledge and observation on the subject, supposed to be composed entirely of fissure veins, or infiltrated deposits from the general impregnation of the surrounding rock. They are massive, solid and regular, so far as developed, while in the deposits, the least infiltration is impregnated with carbonate. The gossan is usually of specular or magnetic iron. Such is the character of the richest copper mines the world over. The richest copper mines now being worked at Williams' Fork district are the Planet, the Mineral Hill and the Eliza. The Mineral Hill ores average 36 p. c. and run as high as 55 p. c. The Eliza ores run as high as 55 p. c. and average 30 p. c., both with immense veins. The Planet, with a large quantity of ore, averages 46 p. c. and run as high as 70 p. c. A cargo from this mine, lately arrived, assayed 61*a*64½ p. c., and sold for $220 per ton.

Washington.

The Vancouver *Register*, August 4th, says of the Vancouver mines: Since our last issue, an assay of four pounds of rock from the Morning Star was made by Mr. Deschamp, of this place, which resulted in about $55 to the ton. The same person is now preparing to test twenty pounds taken from the tunnel lately commenced by Mr. Beall on the Columbia ledge. This rock has a fine appearance, and is thought perhaps, by the best judges, to be the richest rock yet found in these mines. The owners of Columbia ledge, being well satisfied with the rock generally, at the depth at which it is exposed by Mr. R.'s tunnel, have directed him to sink a shaft at its termination, for the purpose of testing the quality of the rock at greater depths, with a view to the erection of machinery, should the rock prove as good as is expected. The owners of the Morning Star have carried their tunnel about 40 feet into the ledge proper, by which they are enabled, as we are informed, to procure rock for testing at a depth of 35 to 40 feet below the surface. They propose to send a ton of this rock by the next steamer to San Francisco, and have it subjected to a working test. More excitement has existed during the past week than in any former period, if, indeed, it may be said that any has existed before. Several water companies have been organized, and we are assured that some of them will proceed at once to the construction of ditches and the erection of machinery. We think it may now be safely stated that a want of confidence will no longer prevent limited investments, or retard a moderate development of the mines.

Montana.

The Dalles *Mountaineer*, August 17th, says: On Wednesday evening we conversed with a gentleman whom we noticed upon the arrival of the cars from above, to be carrying rather a heavy load, judging from the way in which he tottered under it. He informed us that himself and partner were just returning from the Blackfoot mines, where they had worked since last fall, and they were now on their way to California with the nice sum of $100,000 as the result of their labor. He spoke highly of the mines in Montana, though the diggings were overdone this year, but expressed the belief that with another season what men remained would be well repaid for their labor. Judging from the various sacks of dust we see passing through in the hands of miners, it is fair to presume that not more than one-third of the gold passed through the express, so that it is not fair to base the yield of the mines on the express shipments.....The Montana *Post*, September 1st, says: We learn that on Thursday night last the sluice boxes on Mr. Tirnan's claim, above the toll gate on Alder Gulch, were robbed of all the dust they contained after a run of over two hours. These claims have been paying about $1,000 per day for some time past; consequently Mr. Thief must have procured enough to pay his way at the "dance house" that night.

British Columbia.

At Williams' Creek. says the Cariboo *Sentinel*, the principal claims are yielding steadily as per last reports. Last Chance company washed up on Wednesday 34 ounces, on Friday 64 ounces, on Saturday 106 ounces, yesterday 22 ounces: total for week, 226 ounces. California company washed up for the week 80 ounces. Moffet company expect to get on pay this week. Cameron company washed up for week 127 ounces, giving a dividend, after paying expenses of $100 per share. Forest Rose company washed up for week 50 ounces. Raby company washed up 140 ounces for week. Prairie Flower company took out 130 ounces for week. Dead Broke company worked four days last week and washed out 50 ounces. The caving of their ground hindered them greatly. Prince of Wales company washed up for week 30 ounces. The Davis company have sunk a shaft 65 feet and are drifting. The Watson company are taking out a little pay.

GOLD.

COMPANY.	SHARES.	STOCK.	SITUATION OF MINE.	SECRETARY & PLACE OF BUSINESS.
Acadia			Nova Scotia	H. W. Nelson, 24 City Ex., Boston.
Ada Elmore	200,000	$2,000,000	South Boise, Idaho	B. Lawrence, 157 B'way, N. Y.
Amber	300,000	300,000	Greene Co., Penn	Geo. W. Grove, 276 S. Third, Phil
Albion		300,000	Halifax, Nova Scotia	H. W. Nelson, 24 City Ex., Boston.
Alps	100,000	250,000	Illinois Central Dist., Col.	J. Stanton, Jr., 25 Nassau, N. Y.
Ascot	50,000	5,000,000	Sherbrooke, Canada E.	G. H. Morrison, 17 Nassau, N. Y.
Atlantic				Chas. Barrett, 13 Doane, Boston.
Atlatic & Pacific	50,000	5,000,000	Humboldt T., Humbolat co.	J. N. Sewall, 8 Broad, N. Y.
American	100,000	5,000,000	Gregory Dist.	
American Flag	60,000	600,000	Nevada Dist., Col.	H. Foles, 71 B'way, N. Y.
Astor	200,000	1,000,000	On Comstock Lode	J. Chapman, 71 Broadway, N. Y.
Baltic			Colorado	New York.
Bates & Baxter			Colorado	New York.
Bay State	200,000		Colorado	Leon't Bangs, Boston.
Benton	100,000	500,000	Colorado	F. W. Capen, 44 Ex. Pl., N. Y.
Black Hawk	50,000	5,000,000	Gilpin co., Col.	D. Littlejohn, 81 John, N. Y.
Beacon		500,000	Halifax co., Nova Scotia	J. B. Post, 20 Ex. Pl., N. Y.
Bobtail	100,000	1,000,000		J. Stanton, Jr., 25 Nassau, N. Y.
Briggs	10,000	1,000,000	Gilpin co., Col.	D. Littlejohn, 81 John, N. Y.
Bradshaw	250,000	1,000,000	Yavapai County, Arizona	O. H. Conover, 219 Dock st., Phil
Burroughs	100,000	1,000,000		L. Bangs, 22 Pine, N. Y.
Bullion	200,000	1,000,000	Bannock, Montana	69 Liberty, N. Y.
Bullion Consol.	300,000	300,000	Sammit and Clear Creek., Col.	J. P. Whitney, 19 Lindall, Boston
Calvin	200,000	1,000,000	Clear Creek co., Col.	
Canadian				A. Call, 7 Phœnix B'l'g, Boston.
Chem. Gold&S. R				64 B'way
Ch. Un. Gold Co.	240,000	1,200,000		Jesse G. Pitts, 69 Liberty
Chebucto	100,000	500,000	12 miles from Halifax	J. E. M. Gilley, Boston.
Clarendon		500,000	5 miles from Halifax	H. Doane, 41 State, Boston.
Chase		5,000	Colorado	W. E. Lawton, 81 John, N. Y.
Central Gold M.	20,000	1,000,000	Central City, Col.	L. Bangs, 17 Nassau, N. Y.
Central Mining	200,000	1,000,000	Colorado	46 Exchange Pl., N. Y.
Chandiere	100,000	500,000	5,000 A Famine Riv. C. E.	Wm. B. Fowle, Boston.
Cobden	100,000	1,000,000	Idaho	New York.
Colonial				W. N. Ely, 7 Trav'r B'l'g, Boston.
Colorado Boston			Colorado	R. C. M'Laughlin, 60 State, Bos'n.
Colorado N. Y.			Colorado	12 Pine, N. Y.
Coleman			Colorado	New York.
Columbia	30,000	3,000,000	Austin City, Nevada	10 Pine, N. Y.
Consuelo Gold				54 William.
Consol Gregory	50,000	5,000,000	Gregory Dist., Col.	30 Pine, N. Y.
Cook & Kimball	1,000	150,000	Colorado	W. W. Baldwin, 35 Wm., N. Y.
Copthisbee	250,000	5,000,000	Parke co., Col.	J. C. Stocker, 157 B'way, N. Y.
Corrisanee	100,000	1,000,000	Colorado	New York.
Commonwealth			Nevada	Philadelphia.
Corrydonn	100,000	2,500,000	Gilpin co., Col.	46 Exchange Pl., N. Y.
Continental	20,000	2,000,000	Gregory Dist., Col.	115 Liberty, N. Y.
Central Gold	200,000	1,000,000		L. Bangs, 22 Pine, N. Y.
Dauphin & Colo.	200,000	1,000,000	Colorado	John S. McMullin, 423 Walnut, Pa.
Day & Bushnell	300,000	3,000,000	Colorado	T. Chalmers, Jr., 20 Ex. Pl., N. Y.
De Lery		10,000,000	Chandiere Valley, Canada E.	J. M. Winchell, 72 Cedar, N. Y.
Denver	50,000	1,000,000	Gilpin & Clear Creek, Col.	J. Wadsworth, 61 Cedar, N. Y.
Devonshire				W. Stockbridge, 74 Fr'klin, Bos'n.
Downieville	300,000	300,000	Colorado	J. C. Harriott, 70 Wall, N. Y.
Dorset			Chandiere River, C. E.	F. McJimsey, 59 Wm., N. Y.
Eagle	100,000	1,000,000	Gold Dirt Dist., Col.	J. P. Davies, 81 John, N. Y.
East Bannack	100,000	200,000	Bannack City, Montana	J. Callender, 48 Ex. Pl., N. Y.
Eldorado	500,000	2,500,000	San A Dist., 9 miles of Austin	208 S. Fourth, Phila.
Empire Mill & M				O. F. Grillin, San Francisco.
Enriquetta			Arizona	W. Stockbridge, 74 Fr'klin, Bos'n.
Esperanza		500,000	Star D., Humboldt co.	117 Broadway, N. Y.
Etna	50,000	500,000	Nevada Dist., Col.	C. W. Bryant, Boston.
Excelsior	20,000	300,000	Central City, Col.	J. Weatherbee, Jr., 11 P. O'g. Bos.
Fairmount	20,000	200,000	Colorado	John P. Harker, 109 N. 6th, Phil.
Famine Falls	100,000	1,000,000		D. L. Dodge, 80 B'way, N. Y.
Garrisons	100,000	5,000,000	Colorado	C. G. Mease, 29 William, N. Y.
Gem	25,000	1,250,000		H. K. Gates, 191 B'way, N. Y.
Georgetown			Colorado	New York.
Gilbert River				C. F. Jackson, 18 Phe'x E'g, Bos'n.
Gilpin				C. W. Galloupe, 76 State, Boston.
Golconda	250,000	5,000,000	Sherbrooke, Canada E.	W. H. Adams, 19 Broad, N.Y.
Gold Field				C. B. Cowling, 39 Kilby, Boston.
Gold Rock	5,000	500,000	Central City, Colorado	R. M. Lockwood, 113 Wall, N. Y.
Gold Hill	50,000	500,000	Colorado	W. T. Eustis, Boston.
Gold Mountain	600,000	6,000,000	Clear Creek Co., Colorado	25 Nassau, New York.
Gold Min'g of Col	50,000	5,000,000	Colorado	E. Latham, 23 William, N. Y.
Golden Gate	60,000	600,000	Sum., Highl'd & Mill C. D., Mon	J. Morse, Jr., 117 B'way, N. Y.
Gunnel Central			Colorado	70 Broadway, N. Y.
Gunnel Gold	300,000	3,000,000	Colorado	F. E. Roelfson, 78 & 80 B'way, N.Y.
Gregory	20,000	1,000,000	Colorado	Thos. Wildes, 17 William, N. Y.
Granada	50,000	125,000	Colorado	J. Stanton, Jr., 25 Nassau, N. Y.
Great Western	60,000	600,000	Russel Dist., Col.	E. Kemeys, 70 Broadway, N. Y.
Gunnel Gold	100,000	1,000,000	Colorado	F. E. Roelofson, 78 B'way, N. Y.
Halifax				A. Case, 7 Phœnix B'l'g, Boston.
Harmony				Demas Barnes, 21 Park Row.
Hemit'ge Ranch	30,000	300,000	El Dorado, Cal.	
Home	80,000	2,000,000	G'ld Dirt Lode, Gilp co., Col.	J. P. Davies, 81 John, N. Y.
Holman	150,000	300,000	Gilpin co., Col.	J. O'Neill, 24 Nassau, N. Y.
Humboldt	100,000	500,000	Colorado	78 B'way.
Idaho Gold	100,000		Montana	5 Pine, N. Y.
Isaac's Harbor	100,000	500,000	Isaac's Harbor, Nova Scotia	W. F. Shirley, 157 B'way, N. Y.
Isle Royale				44 Ex. Pl.
Kansas Colorado	100,000	1,000,000	Colorado	J. G. Greenlies, 111 B'way, N. Y.
Kent				G. H. Wyman, 19 Phe'x B'l'g, Bos.
Kip & Buell	100,000	200,000	Colorado	J. C. Harriott, 70 Wall, N. Y.
Knickerbocker	100,000	1,000,000	Colorado	F. Avery, 78 B'way, N. Y.
La Crosse	100,000	$1,000,000	Nevada Dist., Colorado	H. Fales, 71 B'way, N. Y.
Liebig	200,000	$1,000,000	Colorado	
Lake Major	12,000	600,000	Nova Scotia	Fred. Franck, 113 Water, N. Y.
Mariposa Gold	100,000	10,000,000	Bear Valley, Cal.	G. W. Farlee, 34 Wall, N. Y.
Mammoth	50,000	500,000	Colorado	J. Jarrett, 41 Liberty, N. Y.
Manhattan	100,000	5,000,000	Colorado	W. R. Lothrop, 172 B'way, N. Y.
Massachusetts	250,000	2,500,000	Gilpin co., Col.	W. D. Briggs, 11 Phe'x B'l'g, Bos.
Merchants	30,000	600,000	Alturas co., Idaho	Jas. K. Selleck, 157 B'way, N. Y.
Metropolitan				
Mountain Pride	100,000	1,000,000	B'r C'k, St. Bse., Idaho	29 Pine, N. Y.
Montague	50,000	500,000	near Halifax, Nova Scotia	C. B. Cowling, 39 Kilby, Boston.
Mount Alpine			Griffith Dist., Clear C'k, Col.	J. B. Randol, N. Y.
Mount Vernon	500,000	5,000,000	Mt. V. & Mam'th Dist., Nev.	25 Park Row, N. Y.
Mount Vista	50,000	500,000		J. Chapman, 22 Nassau, N. Y.
Montana	100,000	400,000	Nevada, Ills., Greg'y, Col.	A. L. Guerber, 54 Wm., N. Y.
Monte Christo	100,000	2,000,000	White Pine District, Nev.	Thos. Dunlap, 413 Chestnut, Phil.
Montezuma	100,000	500,000	Colorado	F. B. Webster, Boston.
Montrose	100,000	1,000,000	Clear Creek co., Col.	C. A. W. Sibley, 80 B'way, N. Y.
Morning Star	5,000	5,000,000	Owyhee co., Idaho	E. M. Barnum, 157 B'way, N. Y.
Mexican Pacific	100,000	10,000,000	Mexico	J. Mackie, 88 Wall, N. Y.
Melones & Stan			Calaveras co	606 Mont, San Francisco.
National	300,000	3,000,000	on So. Boulder C'k, Col.	51 School, Boston.
Nevada Star				25 Pine, N. Y.
New England	50,000	150,000	Black Hawk, Col.	J. Weatherbee, Jr., Boston.
New Mexico			near SantaFe	
New Gregory				W. A. Kent, 144 State, Boston.
New York City	50,000	5,000,000	G'd Canon D't, Land. co. Nev.	10 Pine, N. Y.
New York Dist.	50,000	500,000	Austin, N. Y. Dist., Nevada	71 B'way, N. Y.
New York of Col	60,000	1,000,000	Colorado	F. E. Roelfson, 74 B'way, N. Y.
N. Y. & Nevada	100,000	1,000,000	Nevada	J. J. Osborn, 30 Pine, N. Y.
N. Y. G Min'g	100,000	1,000,000	Colorado	F. E. Roelofson, 78 & 80 B'way
N. Y. & Elder'do	250,000	2,500,000	Nevada	G. H. Munroe, 106 B'way, N. Y.
N. Y. & Idaho			Idaho	180 Chatham, N. Y.
N. Y. & Santa Fe			Nevada	New York.
N.Y. & Owyhee		1,000,000	Owyhee co., Idaho	6 Pine, N. Y.
N. Y & Oro Fino	10,000	1,000,000	Owyhee co., Idaho	137 Broadway, N. Y.
N. Y. & Reese R			Nevada	New York.
N. Y. & Renfew				2 Murray, N. Y.
N. Y. & Washoe			Nevada	New York.
North Clear C'k	100,000	1,000,000	Gilpin co., Col.	J. Francis, 80 B'way, N. Y.
Nova Scotia				Chas. Barrett, 13 Doane, Boston.
N. Y. & Nova Sc	100,000	1,000,000	Tangier, Nova Scotia	Jos. E. Gay, 3 Hanover, N. Y.
National S Min'g		1,500,000	Owyhee co., Idaho	115 B'way, N. Y.
Occidental	5,000	500,000	Nevada & Ills. C. Dist., Col.	100 B'way, N. Y.
Oldham				Chas. Barrett, 13 Doane, Boston.
Ophir	62,500	625,000	on Comstock Lode, Nevada.	Messrs A. Hopnock, 45 William.
Pacific	40,000	4,000,000		24 Pine, N. Y.
People's	100,000	5,000,000	Alpine & Sierra cos.	23 Nassau.
Peck				E. R. Sawyer, 144 State, Boston.
Perigo	60,000	3,000,000	Ind. Dist., Gilpin co., Col.	J. W. Stratton, 90 B'way, N. Y.
Pine Mountain	30,000	3,000,000	Pine Mountain Dist., Nev.	F. K. McCully, 157 B'way, N. Y.
Pioneer & Inskip			Buena Vista Dist., Nevada	15 Nassau, N. Y.
Phila. & Color'do	20,000	1,000,000	Central City, Col.	E. W. Clark & Co., Phila.
Phelps & Gilm're	200,000	1,000,000	Colorado	W. H. Steudevant, 25 Nassau.
Pleasant Valley	125,000	1,250,000	Colorado	J. S. Lyon, 69 Wall, N. Y.
Pontiac	50,000	1,000,000	Ill. Cen. M Dist., Col.	R. H. Rickard, 19 Nassau.
Prescott	100,000	1,000,000	Central Arizona	69 B'way, N. Y.
Quaker City			Ind't D't, G'd D't City, Col.	103 South Third, Phila.
Quartz Hill	40,000	100,000	Nevada Dist., Col.	J. A. Tyler, 29 Wall, N. Y.
Rauche C'k	10,200	1,200,000	Pine Wood Dist., Nevada	18 Broad, N.Y.
Realito		1,600,000	G'd Hill D., Storey co., Nev.	117 B'way, N.Y.
Reese River Pr'l	100,000	1,000,000	AmadorDist., Lander Co., Nev.	Elijah Alliger, 67 Wall, N. Y.
Renfrew				W. Stockbridge, 74 Fr'klin, Bos'n.
Republic	15,000	1,500,000	Amador D., Lander co., Nev.	67 Exchange Pl., N. Y.
Rocky Mountain	50,000	500,000	Grey & Empire Dists., Col.	E. L. Bolles, 70 B'way, N. Y.
Reciprocity	100,000	1,000,000	Canada East	B. R. Grant, Jr., 71 B'way, N. Y.
Scorpion			Virginia City, Nevada	617 Clay, San Francisco.
Sherbrooke	100,000	1,000,000	Sherbrooke, Canada East	F. Schumacker, Cliff, N. Y.
Silas Wright	60,000	600,000	Amador D., Lander co., Nev.	18 Wall, N. Y.
Silver State	100,000	500,000	Humb't Starr. Pr. R. D. Humb't co., Nevada	R. S. Miller, 49 William, N. Y.
Silver Wave	300,000	3,000,000	Resee riv., Lander co., Nev.	Emmet Blair, 243 B'way, N. Y.
Smith & P'mlee	125,000	2,500,000	Colorado	G. A. Lathrop, 4 Broad, N. Y.
Smithfield	100,000	400,000	Gilpin Co., Col.	A. F. Baum 48 Broad st., N. Y.
Spanish		3,000,000	La Plata, Churchill co., Nev.	228 South Third, Phila.
So. Clear C'k			Colorado	Canastota, N. Y.
Starlight Ledge	50,000	500,000	Pr'ville, El Dorado co.	
Star of Color	200,000	2,000,000	Colorado	J. N. Powers, 22 Pine, N. Y.
Standard	50,000	500,000	Gregory Dist., Col.	T. A. Mitchell, 70 B'way, N. Y.
Steptoe	20,000	2,000,000	G'd Can., Lander co., Nev.	10 Pine, N. Y.
Sterling City		1,200,000	Colorado	New York.
Stewart	100,000	500,000	Colorado	C. Durham, 31 Exchange, Boston.
Suffolk				Carlos Cobb, 22 William, N. Y.
Southard				Wm. Wallace, 11 Doane, Boston.
Stafford				C. E. Jackson, 15 Central, Boston.
Tascher	100,000	1,000,000	Colorado	F. J. Wright, 8 Wall, N. Y.
Texas	50,000	500,000	Black Hawk City, Colorado.	Wm. E. Parish, 155 B'way, N. Y.
Triunfo			San Antonio, L. Cal.	San Francisco.
Union	240,000	12,000,000	Colorado	F. A. Potts, 110 B'way.
United States	75,000	1,500,000	Colorado	J. P. Stevens, N. Y.
University				31 Nassau, N. Y.
Virginia City	250,000	250,000	Nevada	J. B. William, 78 & 80 B'way.
Wauba Yuma	600,000	6,000,000	Arizona	25 William, N. Y.
Waddingham	48,000	1,200,000	Alturas co., Idaho	Jas. K. Selleck, 157 B'way, N.
Waverley				J. Leighton, 97 State, Boston.
Windsor Gold M	10,000	100,000	Colorado	25 William, N. Y.
Wilson & Cass			Colorado	New York.

LEAD.

COMPANY.	SHARES.	STOCK.	SITUATION OF MINE.	SECRETARY & PLACE OF BUSINESS.
Amenia	100,000	$ 500,000	Duchess co., N. Y.	G. Furman, 77 Cedar, N. Y.
Bucks County	10,000	200,000	Bucks co., Pa.	R. R. Sinclair, 53 Ex. Pl., N. Y.
Canada	40,000	250,000	Canada	Alb. Case, 7 Phe'x B'l'g, Boston.
Clute	150,000	550,000	Macomb T. St. Law. co., N. Y.	Bev'l'y S. Merrill, 42 Cedar, N.Y.
Continental	200,000	500,000	Martinsburg, N. Y.	J. Sickles, 57 Ex. Pl., N. Y.
Eastport	100,000	1,000,000	Eastport, Me.	R. Vose, 54 William, N. Y.
Erie	40,000	4,000,000	Orange co., N. Y.	Ogden Gaul, 25 Pine, N. Y.
Hampton	100,000	500,000	Hampshire co., Mass.	C. W. Bryant, Boston.
Jefferson				65 Wall, N. Y.
King's Hill	0,000	50,000		W. L. Haskin, 180 B'way, N. Y.
Lake Superior	200,000	1,000,000	(Secs. 5 & 36 T., 49 & 50 R., (28 & 29 Marquette co., Mich.	C. L. Mather, N. Y.
Lancaster	50,000	250,000	Lancaster co., Pa.	J. R. Sibley, 35 Pine, N. Y.
Macomb	10,000	550,000	Macomb T. St. Law. co., N. Y.	C. E. Scofield, 42 Cedar, N. Y.
Maine	50,000	500,000	Eastport, Me.	A. L. Butler, 54 William, N. Y.
Mineral Point	100,000	500,000	St. Lawrence co., N. Y.	H. W. Warren, 60 City Ex., B'stn.
Morgan	100,000	500,000		W. Williams, 42 Cedar, N. Y.
Nassau				40 B'way, N. Y.
Mount Hope	80,000	200,000	Mt. Hope, Orange co., N. Y.	W. Williams, 24 Pine, N. Y.
New Hampshire	100,000	500,000	New Hampshire	W. A. Farrar, 71 B'way, N. Y.
N. Y. & Boston		1,000,000	Chester co., Pa.	S. M. Cockeln, 22 William, N. Y.
Oswegatchie				24 Pine, N. Y.
Owens Lake		50,000		C. W. Bord, 78 Cedar, N. Y.
Phœnix		50,000	250,000 Columbia Co., N. Y.	G. W. Butler, 54 William, N. Y.
Placentia Bay		200,000	1,000,000 Newfoundland	J. Simpkins, 29 Wall, N. Y.
Ramsay		20,000	500,000 Township Ramsay, C. W.	C. W. Bryant, Boston.
Rochester		200,000	500,000	J. A. Ferguson, 8 Wall, N. Y
Rossie				24 Pine, N. Y.
Rosa Clara		100,000	1,000,000	H. Lathrop, 25 Nassau, N. Y.
St. Clair		100,000	1,000,000	H. B. Hawkins, 25 Nassau, N. Y
St. Joseph		100,000	1,000,000 St. Francis Co., Missouri.	Jas. R. Knapp, 6 Broad, N. Y.
Shawangunk		100,000	500,000 Mt. Hope, Orange co., N. Y.	E. P. Ackerman, 48 Pine, N. Y
Sussex		25,000	625,000 Sparta Town, Sus'x co., N. J.	F. H. Stow, 53 Cedar, N. Y.
Walkill			Orange co., N. Y.	W. A. Scott, 11 Wall, N. Y.
Warren			Warren, Gratton co., N. H.	J. S. Christie, 100 B'way, N Y
White Mountain			New Hampshire	111 B'way, N. Y.

SILVER.

COMPANY.	SHARES.	STOCKS.	LOCATION OF PROPERTY.	SEC'Y AND PLACE OF BUSINESS.
Amazon	25,000	$250,000	Nevada	W. L. Louther, 134 So. 3d, Phil.
Argentine	50,000	250,000	Argentine Dist., Colorado	D. L. Dennison, 134 State, Boston
Arizona	100,000	10,000,000	22 m W of Tubac, Arizona	J. B. Randol, 25 Nassau, N. Y
Astor	200,000	1,000,000	On Comstock Lode, Nev	J. Chapman, 71 Broadway, N. Y.
Atlantic & Pac	50,000	1,000,000	Humboldt T. Hum't Co, Nev.	J. N. Sewall, 3 Broad st., N. Y.
Big Smoky	20,000	600,000	Smk'y Hill, Lander Co. Nev.	71 B'way.
Black Eagle	7,000	350,000	Carson, Owyhee co., Idaho.	O. D. Gardner, 40 Maiden lane.
Bullion	200,000	1,000,000	Bannock, Montana	65 Liberty street.
Bush	50,000	500,000	Austin City, Nevada	176 Chambers st., N. Y.
Combination	5,000,000	50,000	Nevada	J. W. Stoute, Jr., 155 B'way, N.Y
Colorado Con			Cedar Hill Nevada	New York.
Columbia	30,000	3,000,000	Austin City, Nevada	J. E. Smith, 10 Pine street, N. Y.
Coun. & Nevada	120,000	1,250,000	Averill, Churchill Co. Nev	49 Liberty street, N. Y.
Commonwealth	200,000	2,000,000	Gold Hill, Nevada	78 B'way, N. Y.
Cosmos	10,000		Owyhee Co. Idaho	137 Broadway, N. Y.
Del Norte & S'br			Lower California	New York.
Durango	5,000	500,000		W. R. Garrison, 73 W'm st., N Y.
East Bannock	100,000	200,000	Bannock City, Montana	J. Callender, 49 Ex. P., N. Y.
Empire G. & S.	100,000	10,000,000	Bodie Bluff, Mono	H. R. Gates, 191 Broad'y, N. Y.
Empire and Silver State	20,000	2,000,000	Reese River Dist., Nevada	57 B'way, New York.
Eldorado	500,000	2,500,000	San A 9 m s of Austin, Nev.	208 South Fourth street, Phila.
Essex & Diadem	125,000	2,500,000	Sierra dis, Humboldt C. Nev.	A. R. Wetmore, 81 Vesey st, N.Y.
Franklin			Nevada	Philadelphia.
Gem	200,000	1,250,000		H. K. Gates, 191 B'way, N. Y.
Globe	100,000	500,000	Austin, Nevada	J. W. Brazier, 26 Pine, N. Y.
Good Hope	20,000	1,000,000	40 m S of Austin, Nevada	80 Broadway, N. Y.
Huron			Montano	New York.
Incas	399,000	300,000	Summit co., Colorado	J. P. Whitney, 19 Lindall, Bost.
Knickerb'r and Nevada	20,000	2,000,000	Union Dis, Nye Co, Nev	H. R. Shotwell, 70 Cedar, N. Y.
Lander Hill			Nevada	74 B'way, New York.
Lincoln		1,000,000	Owyhee Co, Idaho	80 Broadway, N. Y.
Lw'r California	40,000	2,000,000	North Part of Lower Cal	55 William street, N. Y.
Madison	30,000	3,000,000	Nevada	W. W. Perkins, 71 Bd'wy, N. Y.
Macedon			Nevada	Philadelphia.
Manhattan			Nevada	57 B'way, New York.
Merchants	20,000	600,000	Alturas Co. Idaho	157 Broadway, N. Y.
Metropolitan	15,000	1,500,000	Austin City, Nevada	158 Broadway, N. Y.
Morning Star	5,000	5,000,000	Owyhee County. Idaho	137 Broadway, N. Y.
Mount Vernon	500,000	5,000,000	Mount Vernon & Mammoth District, Nevada	New York.
Mount Vista	50,000	500,000		J. Chapman, 71 Bway. New York.
National	15,000	1,500,000	Owyhee Co. Idaho	115 Broadway, N. Y.
Nevada	100,000	300,000	Mountain Wells. D. Ch. co. Nev	323 Walnut street, Phila.
Nevada	20,000	1,200,000	Nevada	E. L. Boiles, 74 B'way, N. Y.
New Y'k & Lone	20,000	2,000,000	Ione City, Nye Co., Nev	71 Broadway, N. Y.
New York	1,500	1,500,000	Austin, Nevada	S. R. Hutchinson, 80 B'way, N.Y.
New York City	50,000	5,000,000	Gold Can Dist. Lander Co. N.	10 Pine street. New York.
New Y'k Dis'ct	50,000	5,000,000	80 m f'm Austin, N. Y. Dis. Nevada	S. A. Hopkins, 71 Broadway, N Y
New Y'k & Nev.	10,000	1,000,000	Nevada	J. J. Osborn, 30 Pine street, N. Y.
N. Y. & Owyhee		1,000,000	Owyhee Co. Idaho	6 Pine street, New York.
N. Y. & Oro Fino	10,000	1,000,000	do. do.	137 Broadway, New York.
N. Y. and Silver Peak	20,000	2,000,000	Nye County, Nevada	R. C. Root, 74 Broadway, N. Y.
N Y. & Santa Fe			Nevada	New York.
N. Y. & Washoe			Nevada	New York.
North Am. M'g			Nevada	Philadelphia.
Ocean Transit		1,500,000	Lower California, Mexico	24 Pine, N. Y.
Ophir			On Comstock Lode, Nev	
Pah Ranagat Cl	50,000	5,000,000	Nevada	26 Pine, N. Y.
People's	100,000	500,000	Alpine & Sierra Counties	8 Pine street, New York.
Phœnix	200,000	2,000,000		48 East 26th street, New York.
Picacho	50,000	2,000,000	Arizona	T. H. Perkins, New York.
Pine Mount'n	30,000	3,000,000	Pine Mount'n Dist. Nev	F. K. McCulley, 100 Bd'wy. N. Y.
Pioneer & Inskip			Buena Vista Dis., Austin, Nev	15 Nassau street, New York.
Prescott	50,000	2,500,000	Arizona	T. H. Perkins, New York.
Presidential	125,000	2,500,000	Austin, Nevada	Wm. Lemmon, 17 Broad, N. Y.
Republic	15,000	1,500,000	Amador. D Lander Co. Nev.	67 Ex. Place, New York.
Revenue Exten	50,000	500,000	Lander County, Nevada	W. L. Kite, 142 South 4th, Phila.
Rosario & Carmo	5,244	1,480,000	Sinaloa, Mexico	San Francisco.
San Antonio	60,000	3,000,000	Arizona	C. Lamson, 21 Nassau st., N. Y.
Seminole	7,000	1,500,000	Uniony. Humboldt Co. Nev.	L. G. Wilkin, 119 B'way, N. Y.
Silas Wright	60,000	600,000	Amador. D Lander Co. Nev.	18 Wall street, New York.
Silver Hill	40,000	1,000,000	Nevada	J. C. Hitchcock, 62 B'dway, N.Y.
Silver Series		1,000,000	Lander Co., Nevada	W. B. Rogers, 117 B'way, N. Y.
South Boise, T Co	200,000	2,000,000	Alturas Co., Idaho	A. M. Palmer, 19 Broad st., N. Y
Star Hill	20,000	1,000,000	Nevada	155 B'way.
St'h Cl' Crk			Colorado	Canastota, New York.
Stephenson	500,000	1,000,000	18 m E of Ft. Fillmore	A. S. Kellogg, 22 Pine, New York.
Steptoe	20,000	2,000,000	Gold Can. Lander Co. Nev.	10 Pine, New York.
Sterling City		1,200,000		New York.
Tarshish	12,000	1,200,000	Toryabee Range. Un. D., Nev	H. S. M'Collum, 78 B'way, N. Y
Tempest	200,000	1,000,000		L. Bangs, 17 Nassau, N. Y.
Trumbo			San Antonio. Lo'wr Cal.	San Francisco.
Toiyabee	50,000	5,000,000	Pine W'd, Mo'tn Dis, Nev.	J. M. Brown, 157 B'wy, N. Y.
Union & El D'o	100,000	1,000,000	Mogul Silver Mn'tn	40 Park Row.
Upper Missouri		100,000	Montana	107 Broadway.
Vedder	21,000	2,100,000	Amador Dist., Nevada	L. G. Bingham, 80 B'way, N.Y.
Wamba Yuma	600,000	6,000,000	Arizona	35 William street, New York.
War Eagle	50,000	200,000	Owyhee Co., Idaho	G. M. Eldridge, 144 S. 4th, Pl.
Washington	22,500	2,250,000	Austin, Nevada	S. R. Hutchinson, 80 B'way, N.Y.
White Mountain			New Hampshire	111 Broadway, New York.

COPPER.

COMPANY.	SHARES.	CAPITAL.	SITUATION OF PROPERTY	SEC'Y., AND PLACE OF BUSINESS.
Adventure,	20,000		Parts of Sections 35, 36, T. 51, N Range 38 W.,	W. H. Smith, 51 Ex. Pl, N. Y.
Etna,	20,000		1226 A in Secs. 6, 7, 18, T. 58, N R 28, W Keweenaw co. Mich.	B. A. Hoopes, 324 Walnut St., Phil.
Alb'ny & Bost'n,	20,000		Secs 7, 8, 9, 10, 11, T. 55, R. 33	Fred. Beck, 43 City Ex., Boston.
Anita,	20,000		Del Norte co., California,	8 Wall St., N. Y.
Algomah,	20,000		W½ S. 30, T. 51, R. 37,	L. W. Clark, Boston.
Allouez,	20,000		Town 57, R. 32, Sec. 31,	Horatio Bigelow, Boston.
Amy gil'yd'l.,	20,000		E½ Secs. 16, 21, T. 58, R. 20, NW¼ Sec. 5, T. 57, R. 31. 160 A,	F. H. Womrath, 324 Walnut St., Philadelphia.
Arcadian,	20,000		NW¼ Sec. 20, T. 57, R. 33, 160 A,	C. P. Dixon. 48 Pine St. N. Y.
Astor,	20,000		NW¼ Sec. 5, T. 57, R. 31 A. 160 A,	W. Boardman, 35 Court St., Boston.
Atlas,	20,000		NE¼ of E½ & NW¼ of NW¼ Sec. 31, T. 57, R. 31,	L. W. Clark, Boston.
Aztec,	20,000		W½ Sec. 31, T. 51, N. of R. 37,	L. W. Clark. Boston.
Bay State,	20,000		SW¼ Sec. 29, T. 58, R. 21,	L. W. Clark, Boston.
Beaver,	20,000		NE¼ Sec. 32, T. 58, R. 31,	A. W. Boardman, Boston.
Bohemian,	20,000		E½ Sec. 31, NW¼ Sec. 32, T. 51, R. 37, W,	R. H. Rickard. 21 Nassau St., N.Y.
Boston,	20,000			H. W. Warren. 60 City Ex., B'st'n.
Canada,	00,000		Brome co., Canada East,	H. P. Mount, 3 Hanover St., N. Y.
Carp Lake, M.,	20,000		T. 51, N. R. 43, W. S½ of N½ of N. Sec. 14, and E½ Sec. 23, and NE¼ Sec. 23, 440 A.	W. H. Abel, 70 Wall St., N. Y.
Cascade, M.	20,000		SW¼ Sec. 9, T. 49, N. R. 39, W, in Ontonagon co., Mich.,	G. F. Riley. 35 Wall St., N. Y.
Copper Creek,	1,000	$100,000	Missouri,	H. M. Thompson, Missouri, Mo.
Copper Falls,	20,000		Sec. 14, T. 58, N. R. 31, W, Keewenah Point,	97 State. Boston.
Copper Harbor,	20,000		S½ Sec. 10, T. 58, R. 28, 320 A, Keewenah co.,	Fred. Beck. 43 City Ex., Boston.
Copper Creek,	20,000	500,000	Douglas co., Wisconsin,	T. B. Lawson. 71 Broadway, N. Y.
Central,	20,000	500,000	E½ Sec. 23, T. 58, N. R. 31, W,	J. Stanton, Jr., 25 Nassau, N. Y.
Cornwall,			Strafford, Orange co., Vt.,	D. H. Whitney. 17 State St., B'n.
Continental,	200,000	500,000	Martinsburg, New York,	J. Sickles. 50 Ex. Pl., N. Y.
Corinth,	20,000	500,000	Corinth, Orange co., Vermont,	W. A. Cleveland, 191 B'way, N.Y.
Copper Hill,			Wisconsin,	Boston.
Dacotah,	20,000		Sec. 35, T. 55, R. 34, Portage Lake,	J. M. Cooper, Milk St., Boston.
Delaware,	20,000	500,000		S. M. May, 326 Walnut St., B'st'n
Derby,			Ontonagon co., Mich.,	P. C. Blancan, 35 Wall St., N. Y.
Dorchester,	20,000		800 A.,	31 and 32 City Ex., Boston.
Douglas,	20,000		E½ Sec. 30, T. 55, R. 3,	S. J. Edwards, William St., N. Y.
Dudley,				H. Bigelow 43. City Ex., Boston.
Eagle River,	20,000		T. 58, R. 31, Secs. 28, 29, 33, 34.	A. Lamson. 70 State St., Boston.
Ely,	00,000	500,000	325 A., Richmond, Canada East,	Ernest Sacchi, 82 B'way, N. Y.
Empire,	20,000		1798 A., Secs. 1, 2, 11, 12, T. 58, N. R. 28, W. K'w'n co., Min.,	J. S. McMullin, 423 Walnut, Phil.
Eureka,	20,000		W½ Sec. 2, T. 49, N. R. 41, W. Ontonagon co.,	H. Shirley. 137 B'way. N. Y.
Evergreen Bluff,	20,000		NE¼ Sec. 6, T. 50, R. 38,	F. W. Capen. 44 Ex. Pl., N. Y.
Flint Steel R.,	20,000		Sec. 11, 12, T. 50, N. R. 39, W,	F. K. McCully, 157 B'way. N.Y.
Forest City,	20,000		320 A. NE¼ Sec. 36, and SE¼ Sec. 25, T. 51, R. 43,	J. F. Paul, 19 Phœnix Building, Boston.
Franklin,	20,000		¼ Sec. 24, T. 55, N. R. 31 W.,	C. Emery. 26 Kilby St., Boston.
Franconia,	60,000	300,000	New Hampshire,	J. Hanna, 162 Fulton St., N. Y.
French Creek,	00,000		Chester co., Pennsylvania,	R. Roberts, 19 Nassau St., N. Y.
Garden City,	20,000		SW¼ Sec. 60, N. W. Sec. 19, T. 58, N. R. 31 W.	R. H. Howe, Chicago.
Girard,	20,000		600 A. Sec. 15, T. 58, N. R. 28, W. Keweenaw co., Mich.,	B. A. Hoopes, 324 Walnut, Phil.
Gr'd Portage,	20,000		SW¼ Sec. 36, R. 34, W.,	A. S. Kellogg. 22 Pine St., N. Y.
Great Western,	20,000		SE¼ Sec. 30, & SW¼ Sec. 29, T. 21, K. 320 A., Ontonagon	J. M. Cooper, 24 Citty Ex., B'st'n.
Hamilton,	20,000		SE¼ Sec. 35, S½ Sec. 36, T. 50, R. 41, SW¼ Sec. 21, R. 20, 14½ A.,	J. B. Townsend, 44 Exchange, N. Y.
Hancock,	20,000		SW¼ Sec. 26, Tract of Sec. 25, T. 5, R. 34, W.,	Fred. Beck, 43 City Ex., Boston.
Hanover,	20,000			do. do. do. do.
Harford,	20,000	500,000	320 A. E½ & SE¼ Sec. 32, SW¼ & W½ Sec. 33, T. 50, R. 40, W,	T. M. Tyng. 61 Cedar St., Boston.
Henwood,			Michigan,	57 Broadway, N. Y.
Hope,	20,000	50,000	240 acres in T 57, R 32, Kw co.	19 Nassau St., New York.
Humboldt,	20,000		Sec. 21, T. 58, R. 31, W,	Hor. Bigelow, 43 City Ex., B'st'n.
Hudson,	20,000		Ontonagon co.,	P. C. Blancan, 35 Wall St., N. Y.
Huron,	20,000		Sec. 2, T. 54, R. 34, W,	Hor. Bigelow, 43 City Ex., B'st'n.
Isle Royale,	20,000		NW¼ Sec. 1, T. 54, R. 34, W,	F. W. Chapen, 33 Ex. Pl. Boston.
Keweenaw,	20,000	500,000	Michigan,	F. W. Chapen, 44 Ex. Pl., Boston.
Knowlton,	20,000		SE¼ Sec. 1, W½ of SW¼ Sec. 1, and other lands.	44 Ex. Pl., N. Y.
Lafayette,	20,000		Secs. 25, 30, 36, T. 51, N. R. 43, and 44, W, Ontonagon,	P. C. Blancan, 35 Wall St., N. Y.
Lyster,	200,000	$400,000	Township Nelson, Canada East,	H. W. Nelson, 24 City Ex., B'st'n
Lower California	40,000	2,000,000	N. part of Lower California,	55 William St., N. Y.
Madison,	20,000		Part sec. 18, 19 entire, 30, 31.	Fred. Beck, 43 City Ex., B'st'n.
Merryweather,	20,000		Secs. 9, 19, T. 48, N. R. 4, W,	J. T. Waters, New York.
Mandan,	20,000		680 A. Secs. 8, 17, 19, 30, T. 58, N. R. 29, W., Keweenaw co., Min.,	B. A. Hoopes, 324 Walnut, Phil.
Manhattan,	20,000		W½ Sec. 11, NW¼ Sec. 14, T. 58, N. R. 32, W, 360 A.	J. W. Davies, 21 Nassau St., N Y.
Mendotta,	100,000	500,000		M. Taylor, 30 Wall St., N. Y.
Mass. M. Co.,	20,000		SW¼ Sec. 7, T. 50, N.R. 38, W,	J. M. Cooper, Pittsburgh.
Mesnard,	20,000		NE¼ Sec. 24, T. 55, R. 34,	L. Burr, 12 Phœnix B'gs, Boston.
Melones & Stan.,			Calaveras co.,	606 Mont St., San Francisco
Minnesota,	20,000		Sec. 15, T. 50, N. R. 39, W,	S. M. Pond, 12 Pine St., N. Y.
Maryland,			Maryland,	Baltimore.
Merrimac,	20,000		NW¼ Sec. 34, T. 51, R. 38, W, Ontonagon,	J. M. Mills. 284 Pearl St., N. Y
National,	20,000		Sec. 16. T. 50. R. 39. W. 1.988 A.	J. M. Cooper, Pittsburgh.
Native,	20,000		Keweenaw Point. Michigan,	
Nashua,	50,000	100,000	320 A. N. Ontonagon,	W. F. Hardy. 27 City Ex., B'st'n.
Nebraska,	20,000		NE¼ Sec. 12, T. 50, and other lands.	S. W. J. Webb, 54 Wall St., N. Y.
Nequakett,	20,000		Sec. 26. T. 51. R. 43,	G. S. Frost, Detroit.
New York,	20,000		240 A. SE¼ Sec. 10, E½ NE½ Sec. 15.	H. W. Nelson, 24 City Ex., B'st'n.
New Burra,			Baltimore.	R. Robarts, 19 Nassau St., N. Y.
New Jersey Con.	100,000	1,000,000	New Jersey.	W. Bowes, 68 Wall St., N. Y.
N. Y. & Passaic,	100,000		Harrison, Bergen c.,	T. H. Belt, Jr. 23 William St. N.Y
New Devon,				T. H. Belt, Jo, do. do.
North Western,	20,000		W½ Secs. 24. 25. 26, E½ Secs. 36. 35. T. 58. N.R. 31.	17 William St., N. Y.
Norwich,	20,000	500,000	Secs. 11. 12. T. 40, N.R. 39, W, and other lands, 1,300 A.	J. M. Cooper, Boston and Detroit.
Ogema,	20,000	500,000	NW¼ Sec. 6. T. 50. N.R. 33, W	P. C. Blancan, 35 Wall St., N. Y.
Ontonagon,	20,000		631 A. Secs. 20. 21. 28. T. 50. N. R. 39, W. Rockland, Ontonagon,	G. E. Leffingwell, 7 Pine, N. Y
Ont'n'g'n, Mass.	20,000			G. Hart, 11 Pine Street. N. Y.
Otisville,	100,000	500,000	Otisville, Orange co., N. Y.,	William D. Williams. Michigan.
Penn. Manuf'g.,	20,000	1,000,000	4320 A. Secs. 13. 14. 15. 24. ¼ Secs. 10. 11. 12. 23. 25, T. 54. N. R. 30, W.,	C. Windsor, 69 Wall St., N. Y.
Pewabic,	20,000		W¼ Sec. 25. T. 55, N.R. 34, W.	S. M. Day, 326 Walnut St., Phil.
Pitts. & Boston,	20,000		Ts. 58. 57, N. R. 31, 32, W. 12 495 A.	C. Emery, 39 State, Boston.
Pontiac,	20,000		SE¼ Sec. 13. T. 55. N. S. 31, W.	H. A. Johnston, Pittsburgh.
Portage Lake,	20,000		Houghton co. Michigan,	C. Emery, Kilbey St., Boston.
Prescott,	100,000	1,000,000	Central Arizona,	22 William St., N. Y.
Providence,	20,000	500,000	240 A. in Keweenah co., NW¼ Sec. 10, W½ NW¼ Sec. 10, T. 57, R. 32. W.	69 Broadway, N. Y.
Phila. & Boston,	20,000		640 A. Sec. 14. T. 58. N. R. 28. W. Keweenaw co., Mich.	J. W. Davis, 21 Nassau St., N. Y.
Quincy,	20,000		Sec. 26, T. 54. N. R. 34, W,	J. S. McMullin, 423 Walnut St., Boston.
Republic,	8,000	200,000		W. H. Smith, 51 Ex. Pl., N. Y.
Reliance,	20,000		Secs. 21. 22. 27. T. 58, N. R. 28, W, 10,785 A.	H. Baldwin, 70 Wall St., N. Y.
Rochester,	200,000	500,000		H. K. Thomas, 11 Wall St., N. Y.
Ridge,	10,000		Sec. 35. T. 51, R. 38, W,	J. A. Ferguson, 8 Wall St., N. Y.
Rockland,	20,000		Sec. 11. T. 50, R. 39.	51 Exchange Place, N. Y.
Resolute,	20,000		1,120 A. Secs. 7, 18. 19. T. 58, N. R. 29, W. Keweenaw co., Mich,	S. J. W. Barry, 71 B'way, N.Y.
St. Mary,	20,000			F. Beck, 45 City Ex., Boston.
St. Margaret,	200,000	1,000,000	Canada,	E. B. Sutton, 43 Pine, N.Y.
Sharon,	20,000		Ontonagon co., Mich.,	P. C. Blancan, 35 Wall St., N. Y.
Sheldon & Col.,	20,000		SE¼ Sec. 36. T. 55. R. 34. W.	S. J. Edwards, 22 W'm. St., N. Y.
South Side,			SE¼ Sec. 34. T. 55. R. 34, W,	H. W. Nelson, Boston.
Societe Fran'se,	10,000		T. 58, 59, N. R. 28, 30 W,	Copper Harbor.
Suffolk,	20,000			Carlos Cobb, 22 William St., N.Y
Superior,	20,000		W¼ Sec. 14. T. 50. N.R. 39, W.	S. J. W. Barry, 12 Pine St., N. Y
Toltec Consol.,	20,000		Secs. 25, 26, R. 50, R. 36,	H. W. Nelson, Boston.
Union,	20,000	500,000	Wisconsin,	A. S. Kellogg, 22 Pine St., N. Y
Ural,			1,120 A. Secs. 7, 17. 18. T. 58. N.R. 27, W. Keweenaw co.,	17 William St., N. Y.
Vulcan,	20,000		Secs. 20, 29. 30. 34. 34. T. 50. R. 39, and other lands.	F. K. Womrath, 324 Walnut, Phila
Victoria,	20,000		Secs. 17, 18, 19, T. 50, N. R. 39, W,	L. W. Clarke, Boston.
W. Minnesota,	20,000			C. T. Howard, Boston.
Wickopee,	100,000	500,000	Massachusetts.	G. A. Sneden, 12 PineSt., N. Y
Vermont,	100,000	500,000	W. Fairlee, Orange co., Vt.,	191 B'way, N. Y.
Wauka Yuma,	600,000	6,000,000	Arizona,	35 William St., N. Y.

S, means section; T, townsip & R range.

AMERICAN
Journal of Mining.

[ILLUSTRATED.]

GEORGE FRANCIS DAWSON,
EDITOR

By publishing contributions, the JOURNAL OF MINING *does not necessarily endorse the positions assumed by contributors.*

OFFICE, 37 PARK ROW, NEW YORK.

Published Every Saturday Noon.

TERMS:

SUBSCRIPTION.		ADVERTISING.	
Per annum, one copy -	$4 00	One line [Nonp.] 1 inser'n	$0 50
Six months, one copy -	2 25	One Square, 10 lines, one do	2 00
Three months, one copy -	1 25	One Square, do. four do.	5 00
Single copy -	10	One Square, do. one year,	40 00

Canadian subscribers 25 cents extra for postage.

☞ Specimen copies sent free.

☞ Liberal reductions to permanent advertisers.

DESIGNING, WOOD ENGRAVING, LITHOGRAPHING and JOB PRINTING Executed in elegant style, on reasonable terms.

Address **WESTERN & COMPANY, Proprietors,**
No. 37 Park Row, and No. 145 Nassau Street, New York City.

AGENTS,

AUTHORIZED TO RECEIVE SUBSCRIPTIONS AND ADVERTISEMENTS.

☞ ***No persons have authority to receive money and receipt for the same on Western & Company's account except those mentioned below.***

COLORADO.—Geo. Tarter, Denver City.
" W. S. Stanley, Jr., P. M., Mill City, Clear Creek Co.
" S. M. Richards, City Book Store, Central City.
" R. C. Miles, P. M., Golden City, Jefferson county.
CALIFORNIA.—W. E. Loomis, San Francisco.
MASSACHUSETTS.—S. M. Pettengill & Co., Boston, Mass.
MEXICO.—Messrs. B. C. Barksdale y Cia., proprietors of the American and Mexican News Company, and Agencia General de Libros, City of Mexico, Primera Calle de San Francisco, No. 13; Vera Cruz: Calle de Maria Andre, No. 627.
In Guanajuato, Real del Monte, Guadalajara, Durango, San Luis Potosi, and all other mining districts of Mexico, the correspondents of Messrs. B. C. Barksdale y Cia. are the only authorized agents of the JOURNAL.
PENNSYLVANIA.—A. Winch, Philadelphia, Pa.

☞ Correspondents, exchanges and others addressing us should be *extremely careful* to write "JOURNAL OF MINING," instead of "MINING JOURNAL," to ensure safe carriage.

NEW YORK, SATURDAY, SEPTEMBER 29.

Contents of this Number.

EDITORIALS.—To Subscribers—Success of the Journal of Mining, the Reason Why.—A Remarkable Mill Process, astonishing Results.
ORIGINAL PAPERS.—The Utilization of Sodium in Gold and Silver Amalgamation, by Prof. Henry Wurtz; continued.—Southern Mines, by Dr. R. P. Stevens
CORRESPONDENCE.—Hydrogeology—Queer Facts about the "Divining Rod"—"Something in it."
ILLUSTRATED MACHINERY.—Guild & Garrison's Balance Wheel Steam Engine and Pump.
SCIENTIFIC MEETINGS.
MINING SUMMARY.—Latest news from Michigan, Nevada, Idaho, Oregon, Colorado, California, Arizona, Washington, Montana, and British Columbia.
MINERAL AND OTHER ON-PITS.
MISCELLANEOUS.—Queer Mineral Discovery—Profits of Gold Mining—New Copper Washer—Life in the Mines of the West—The Geological Distribution of Petroleum in America—Tribal Coin—About Amalgam—The Blowing Cave of Georgia A "Swindling Concern."
ALL SORTS.
MINING COMPANY MEETINGS—DIVIDENDS.
PATENT CLAIMS.—The latest allowed to Inventors of Mining and Milling Machinery, etc.
TABULAR MATTER.—Gold, Copper, Lead and Silver Mining Companies; Names, No. of Shares, Capital Stock, Situation of Mine, Name of Secretary and Place of Business.
MARKET REVIEW.—Mining and Petroleum Stocks, Finances, Stocks, Metals, etc.
THE COAL TRADE.—Quotations, Shipments, Freights, Cargo Rates, Weekly Coal Trade Circular.
FOREIGN MARKET REVIEW.—Metals, Oil, etc.
NEVADA STOCKS.—Latest advices by Telegraph.
NEW YORK METAL MARKET.

TO SUBSCRIBERS.

Those of our half-yearly subscribers whose term of subscription has expired, and who desire to renew the same, should do so *at once*, as we cannot always give them back numbers of the JOURNAL OF MINING, owing to the great demand for bound volumes—which we keep for sale at $3.25 per volume. Subscribers desiring to have their files of the JOURNAL neatly bound can do so by forwarding same with $1.00 and the amount of postal charges to and from this office. Half morocco, cloth and gold, $1.50.

ASTONISHING SUCCESS OF THE JOURNAL OF MINING—THE REASON WHY.

Six months ago we gave to the world the first number of the AMERICAN JOURNAL OF MINING, believing that sufficient capital, with experience of fourteen years in mining and journalism, added to a knowledge of the requirements of the mining community, and a determination to make it at least a *truthful* medium of mining information, and an earnest exponent and advocate of mining interest, must ultimately ensure success. But when we did so, we had little idea that in the short space of half a year, success—and that of the most flattering description—would be *assured*. Yet such is the case. The JOURNAL, we are happy to say, is now *firmly established*, and may be looked upon as an institution of the land. Such success is truly wonderful. How to account for it we know not, unless by ascribing it to the fact that people had become disgusted with sheets that teemed with most outrageous puffs of wild-cat mines and swindling petroleum companies, and turned with relief to a journal that was, and is, and (while we conduct it) ever shall be, unpurchaseable. Not only the people in general, but men of learning, and the press, have recognized the wide gulf that separates this journal from others pretending to be devoted to mining, but which are in reality only devoted to the pecuniary gain to be derived from indiscriminate puffery. The celebrated Prof. Henry Wurtz, for instance, recently sent us a private note, accompanying his paper on "The Utilization of Sodium in Gold and Silver Amalgamation," in which occurs the following passage:—

* * * I shall be much pleased to contribute, whenever my greatly pre-occupied time will permit, on this and kindred subjects, to your valuable journal—a journal in which I believe I recognize the elements of a successful and praiseworthy attempt to dignify and promote mining and metallurgical literature; an attempt which should command the assistance and encouragement of all interested in those pursuits.

From such a man, such expressions are of value; yet he only speaks the sentiments of dozens of other eminent scientists whom we might name, whose pleasant words (verbal and written) have made our labor pleasant. Headed by the critical *Evening Post*, the press of New York, Nevada, Colorado, California, Michigan, Illinois, Oregon, Pennsylvania, and other States and Territories have also bid us "God speed," and many of them advised their readers to subscribe. Even the French and German papers of this city, and such sterling English periodicals as the London *Quarterly Journal of Science*, and the *London Mining Journal* have spoken of us in the highest possible terms. On our files, too, are hundreds of letters from subscribers, all breathing the same spirit of gladness that they had at last found a journal honest enough to attack bogus mining concerns, where proof of guilt is furnished; some of these letters were *solid* testimonials of esteem: subscriptions for *one, two*, and in one case *three years!* Nor these alone. We have also received invaluable aid in the shape of able original papers (no issue has been without from one to three of them), prepared for the *Journal of Mining* by such men as Francis E. Engelhardt, Ph. Dr., Professor of Chemistry at St. Xaviers College; Professor Henry Wurtz, of New York; H. Dussance, Professor of Industrial Chemistry to the French Polytechnic, Chemist to the French Imperial Laboratories, etc.; Professor Paul C. Morton, of Ogelthorpe University; Dr. R. P. Stevens; Dr. Grant, late State Geologist of Virginia; J. Van Cleve Phillips, M. E., the well known Geologist and Author, and others. And besides these we have the promise of occasional original papers from Professors Josiah P. Cooke Jr., C. A. Goessmann, C. F. Chandler, J. E. Nourse, A. L. Fleury, and others of more or less celebrity in their several departments of Science. Supported by gentlemen of such marked ability, the AMERICAN JOURNAL OF MINING can never recede from the high position it has already reached, as the recognized organ in New York of the mining and metallurgical interests of the United States. With their kind cooperation, together with the rapidly increasing patronage of subscribers and advertisers, how can we fail to make the present volume even better and more sought after than the last?

A COAL EXCHANGE FOR NEW YORK.

Philadelphia, Baltimore and other cities on this continent possess Coal Exchanges; so with London, Paris, and other European cities; yet New York has none! How is this? Is it because the heavy wholesale dealers are anxious to keep retail dealers and the general public as ignorant as possible on the coal question? Is it because they think the people already know too much on the subject? Is it because they desire not only to create but to sustain monopoly in this article? Why is it? We should like to know. The press of New York have almost without exception heaped abuse upon the heads of the wholesale coal dealers—calling them "monopolists," "swindlers," almost every epithet contained in the vocabulary, but, so far as we have seen, offering no practicable suggestion as to how the present condition of affairs can be remedied. Such a course can have no influence with us. We propose to be severe only when certain that it is deserved; and we are *not* certain that the heavy coal dealers deserve the opprobium that has hitherto been indiscriminately heaped upon them. Still we are at a loss to know why New York is without a Coal Exchange, and it is our decided opinion that with such an institution all occasion for such attacks must pass away. We think that upon trial the wholesale as well as the retail dealers will find such an Exchange beneficial to them. As things are now conducted, a dealer's unassisted judgment is his criterion of value, and the wider the difference of judgment the greater the difference in prices. Buyers are quick to see this, and apt to hold off in consequence. Besides, at the periodical auction sales, the state of uncertainty thus occasioned produces slim attendance, cautious bidding, and consequent decline of prices, each of which reacts upon the wholesale dealers. Look at the sale of Scranton coal this week for instance. Winter is at hand, and in the natural order of things, the increased demand, in anticipation of cold weather, should have raised the price of every description of coal. But strange to say, the contrary was the case! Egg and Grate were the only classes that exhibited the slightest degree of improvement, and all others fell heavily. This fall will benefit the consumers only. The retailers gain nothing by it, and the wholesalers lose. No wonder, then, that the latter feel grumpy. To avoid such accidents hereafter, as well as to bring themselves into better repute, we earnestly advise them to organize without delay a Coal Exchange, the daily quotations of which will give some sort of uniformity to selling rates, and beget a confidence in them that has not yet been felt.

A REMARKABLE MILL PROCESS—ASTONISHING RESULTS.

On page 376, Vol. I, of the JOURNAL OF MINING, we quoted from the Sacramento *Union* a statement to the effect that a new process—whose was not stated—had been tried at the Mariposa estate, with complete success, and it was claimed that the next months run would prove that $3 rock could be profitably worked in California. Since then another steamer has arrived, and we learn that the first clean-up after using the said process, yielded $32 per ton from rock that had hitherto given but $6; and that the tailings from this new process when assayed exhibited but a trace of gold! The process that produces such grand results is thus described in the San Francisco *Alta*, of August 30th:

The rock is dry crushed, and afterwards submitted to the action of balls in a drum to insure full pulverization, it being desirable that the powder should approach as near wheat flour as possible. A charge of this powdered quartz is then placed in an air-tight cylinder, the interior of which is furnished with a worm of pipes to convey super-heated steam therein. Added to the charge is a given quantity of quicksilver, which is first heated by the introduction of ordinary steam; the super-heated steam is then turned on, and the whole seethed or boiled for an allotted period. On the top of this cylinder, a water-bath is placed, and as the mercurial vapors rise they become condensed. Thus the system of thoroughly impregnating the crushed rock with quicksilver is carried out with efficiency. After thus cooking, the cylinder door is opened, and the whole mass discharged upon a novel shaking table, which

is worked by the power of the steam employed in the previous operation. This table is built of copper; on a wooden frame with rollers and ruffles of peculiar construction, which, when it is in motion, give the water, amalgam and dust the same action as the ocean surf—an undertow. As the mass descends, the amalgam, from its metallic weight, gradually clears itself from the quartz dust, and the result is that it is all collected in the troughs of the riffles, containing every particle of metal, be it precious or base, the quartz holds. The mode of applying super-heated steam to the crushed rock desulphurizes it, freeing the metals, and all that is necessary is to resort the amalgam to obtain the result of the yield.

It will be observed that two great points are gained by this process: *First:* It is cheaper than any other ever used in California, or else it could not be used with profit upon $3 rock; and *Second*: It vastly increases the yield. So it seems, after all, that we have made a great step towards the Australian system (page 296, Vol. I), by which rock containing a trifle over $1 per ton can be worked remuneratively. The immediate results of this invention must be to marvelously increase the gold yields of California and adjoining States and Territories, and give a new impetus to immigration and gold mining enterprises.

SCIENTIFIC MEETINGS.

AMERICAN INSTITUTE MEETINGS—NEW EARTH PULVERIZER—NEW STEAM ENGINE VALVE—NOVEL POWER-COMMUNICATOR—ON VENTILATION—PETROLEUM LUBRICATION—USES OF BARYTES, ETC.

At the opening meeting of the Polytechnic branch of the American Institute, held on Thursday, 20th inst., the Chairman, Prof. S. D. Tillman, reviewed the proceedings of the American Association for the Advancement of Science, held last month, at Buffalo, eulogizing the papers of Kirkwood, Coffin, Hunt, Hilyard, Loomis, Elliott and others, and also the increased attention devoted to science in our Colleges. A model of the new Earth Pulverizer, the invention of Messrs. Tithian & Young, was then exhibited. It consists of a series of rotary cutters, acting on the soil in a nearly uniform manner, while the whole machine has a forward movement. Messrs. Maynard & O'Reilly alluded to other rotary diggers, which are working with success. Dr. Warren Rowell exhibited the model of a valve for locomotives, so arranged that the pressure of steam is evenly distributed; he stated that it was an adaptation of his, previously invented, perfectly balanced rotary valve, which latter is now public property. The same gentleman exhibited two models of plans for transmitting power to distant points. In the first plan he wished to say that substantially the same thing is found on all locomotives where four driving-wheels are used, for in this case double cranks at right angles are connected by rods, but being on opposite sides of the machine, this relation is not noticed. He had now another plan, which he claimed was entirely original. The model exhibited shows three rods forming a triangle; at each angle there is a crank on which two of the rods play. It will be seen that by revolving crank No. 1, motion is communicated direct to crank No. 3, and at the same time, in a round-about way, through crank No. 2, and thus it will be seen pressure is brought to bear on crank No. 3, from two directions at the same time, thus obviating the dead-points which occur when power is applied to a crank in one right line. Mr. Stetson said that experiments on this plan had been tried at Niagara, in communicating power to cranks at a distance of 250 feet, wire ropes were employed to form the junction, the sag and stretch of which were so great that the apparatus proved a failure. Mr. L. B. Page said that Dr. Rowell's arrangement reminded him of a reciprocating motion of a mile and a-half long, which he had seen produced by connection of timber, and working about 20 oil wells, of which he promised to bring a drawing. The subject of ventilation was then introduced for discussion. Dr. Rowell stated that all drafts owed their origin, not to the heated air rising, but to its being pushed up by the entry of denser air which settled beneath it. Since the difference in temperature affected density, he thought people would breathe more easily in cool weather, when the temperature of the air was more different from that of the body than in warm weather. Dr. Bradley did not accept this doctrine, as the action of the lungs was an involuntary one, but the strength to move the lungs was generated by food. The chairman said that the law of the diffusion of gases takes precedence of that of gravitation in some instances, a matter which had been generally overlooked by inventors of ventilators. The subject of ventilation would be discussed at the next meeting.

The second meeting of the society was held on the 27th inst. The question of the refusal by insurance companies to take risks in factories where petroleum in any shape was introduced, gave rise to a discussion as to the comparative danger of that substance and common oils as a lubricator. It was stated that when the machinery, lubricated with petroleum, was wiped with cotton or other fibrous substances, the latter were not liable to spontaneous combustion, whereas when common oil or lard was used it was an exceedingly common thing for these substances, when thrown aside, to take fire; as there were usually workmen about the machinery it was, however, seldom attended with serious consequences—but petroleum was certainly the safer lubricator. The use of barytes was next alluded to. Mr. Feutchwanger stated that the discovery of mines of barytes was now of frequent occurrence. It was a mineral which had sprung up to replace white lead as an enamel on paper and linen. Address and visiting cards were formerly coated with white lead, but it was found that this enamel, and consequently the printing on it, was liable to be wiped off. The prepared barytes was fast, and consequently preferred; but what had given the great impetus to the use of barytes was the paper collar trade. When the collars were covered with white lead, there was reason to fear that the health might be endangered by the pores imbibing this deleterious substance. Barytes had therefore been substituted with so much success that twenty tons per day were used in this city in the collar manufactories alone. In fact, travellers were beginning to take with them paper collars in place of their previous supply of linen, throwing them away when dirty. Dr. Stevens said the time which these collars would keep clean was something extraordinary; he was himself wearing a collar which had lasted already ten days, and how much longer it would keep clean he did not know. Mr. F., in the interest of the collar makers, said it was not by any means intended that the collar should wear so long; one collar for one day was the proper allowance. The question of mixing white lead with barytes was also considered. Mr. F. had had samples of all the white lead in the Navy Yard submitted to him for analysis, he found them all to contain from 18 to 40 per cent. of barytes. As to whether they were worse on that account was another matter, he considered that a certain portion of barytes (up to 25 per cent) improved the white lead. The discussion on ventilation was then continued at some length, Drs. Ritchie, Rich, Stevens, Bradley, Rowell and others participating. Professor Tillman ended the debate by reading a series of very valuable conclusions he had arrived at, from the study of the principles of house ventilation.

Correspondence.

[To insure insertion of Correspondence in our columns the full name and address of the writer must be given.]

Hydrogeology—Queer Facts about the "Divining Rod"—"Something in it."

COLUMBUS, O., Sept. 10th, 1866.

EDITOR JOURNAL OF MINING:

Sir—Having obtained your paper regularly since the commencement of its publication, and finding it a valuable aid to a large interest of the country, of which I have been comparatively ignorant except through its pages, I am inclined to write you a letter (not expecting its publication, because it will be pointless to the general reader, and perhaps not of interest to yourself,) on a subject briefly spoken of in an editorial of your paper, of September 1st, as Hydrogeology. As I have not seen the article in the mercantile journal referred to, I am not able to determine whether the character of the science is the same to which I shall call attention, but suppose it to be analogous. As a preface, I am not engaged in scientific pursuits, but my profession (the legal) has led me to obtain a smattering at least of science generally; and some little experience in my avocation has not inclined me to be over-credulous on any subject. One year since, the following propositions could not have been more ridiculous to any ears than they sounded to my own.

1st, That a forked stick of green-witch hazel or peach (and doubtless some other kinds of wood), will involuntarily turn in the hands of some persons over only certain places, and will not do so in the hands of all persons.

2nd, That the persons in whose hands the so-called divining rod will turn, cannot prevent the turning of the stick; and if the resistance is sufficient, the stick will twist between the hands holding it, or break.

3rd, That a dry or seasoned stick, in which there is no sap, will turn involuntarily.

Now I am conscious that the above will be hooted at; and as I have neither time nor inclination to be a martyr, and the extremes one meets in any proposition urged are as obnoxious to a lawyer as the extremes in evidence, to wit., an unwilling and overwilling witness, I decline being sacrificed. I have on several occasions casually conversed with others on the subject, and know many intelligent men who believe the phenomena, but reason no further. The persons one chiefly finds, however, display a "proud ignorance," saying that if the stick will not turn in their own hands, it will not in any other hands. Among this class of unbelievers, are many of the medical profession, with knowledge from the mould of some peculiar system, and the rebuff a man of sense meets from such men is in exact keeping with a science which, while it holds in its province a vast amount of good, has always been the owner of more humbug, bigotry and arrogance than all the other avocations of mankind put together. Another class of persons believe anything and everything, but ascribe it to particular gifts or supernatural agency, and are as detrimental to the advancement of pure truth as bigotry. Assuming the facts of the propositions, it seems to me that a reasonable man would conclude that in the phenomena is to be found the germ, at least, of a new science, which ultimately, through laws as well defined as those of astronomy, will lead man to read the earth beneath, perhaps, as readily as he now does the firmament above. It may be proper to give some few experiments, and I shall be obliged to do so in a narrative way. Upon leaving the army, about a year since, a party wished to lease lands of me to bore for oil. When the application was made I thought it of no importance, the more so that the idea of boring at a certain place was founded upon the divining rod. Upon observing the willingness of men proverbially careful of money, so sanguine in their operations based as aforesaid, when the judgment of men to whom we look for scientific advice regarded the whole matter as absurd, I undertook to satisfy my mind, intending to dissuade the men engaged in prosecuting a purpose which could end only in a waste of money. I found the stick would not turn in my hands, as it will not in most others; but I also found several others in whose hands a stick would involuntarily turn, and among the number a minister whose intelligence and veracity could not be questioned. Since that time I have found perhaps fifty persons, and have tested the truth of their statements, in various ways. One experiment I think, if well tried, will satisfy any one: Find two or more persons in whose hands the stick will turn; *blindfold* them at different times, and at the same places; try how they agree. This I have done frequently, and in every case their accuracy is undoubted. It may be well to say in regard to diviners, that many of them are humbugs, as men are in anything else; but a close observer will at once detect the difference between a man who turns, or tries to turn, the stick voluntarily, or one in whose possession the rod turns involuntarily. Again, the variety in readiness with which the hazel turns in the hands of diviners, is very great. In some persons' hands the stick will scarcely turn at all; and yet on placing them on the same places barefooted, it turns more readily. Several months since it was said to me by a truthful young man that the more he tried it the more readily the stick turned, and the more power could be used to prevent its turning. In his hands, as in those of several others, the bark on the stick would be bruised and twisted; and occasionally, if the resistance was sufficient, the stick would break, as I have seen it do myself. Any person might hold his hands, or in any other manner guard against any imposition; and exhausting every method I could devise, the most convincing is the blindfold improvement, for this, if properly done, shows that it is entirely involuntarily done on the part of the diviner. That the power increased by experience, had been the statement of several others to me before, and I began to try to reason as to this cause. Hoping that I might be able to compare these facts with some others in a kindred science, I hit upon the following: the ordinary horse shoe may not gain power by use, and yet loses its power by idleness, or the armature not being attached. Is there any analogy between magnetic power and the peculiarity of divining?—as it will not turn in my own hands. I took one of the most powerful of the diviners, and had him take hold of one fork, and in his right hand. I

then took hold, holding the end of the other fork in my left hand; then upon crossing his left hand with my right, the stick was about in the position used. Upon getting to the place where the stick had turned for him, it did turn down in spite of me, and only at certain places. I held it in such a manner that the prints of the buds were on my hands, and myself and others have frequently tried it since, with the same result. As to animal magnetism, as it is called, I know nothing whatever—and the character of the advocates of animal magnetism has been usually those who were disposed to spiritualize or supernaturalize the subject. It has never attracted my attention. A book which I have recently seen on the subject, is of this tendency. It would be a gratification to me to see hydro-geology dignified by the name of a science rather than to be retarded in its investigation by sound men, on account of the ridicule provoked by the absurdities of the credulous. It is needless to say I have tried many other experiments which are only cumulative on the matter, and that I have various theories on the subject; but as my pursuit is of a nature which precludes my investigating anything of this character except at my leisure, my own opinions would weigh little against that of others whose ability, opportunity and knowledge are greater. However, whether I say the stick will turn for water or any other substance, this I do say: that the stick will turn as in the propositions stated, and I believe the subject is pregnant with a philosophy deserving the attention of scientific research. I do not even believe the stick is the best medium for the purpose, but I believe it is the best now known; and that with this much of a science indicated by nature, it cannot be long until invention has given tools by which the nadir can be searched as well as the zenith. Perhaps, in addition to the advantages you predict to the mining interest, not the least benefit to man will be a knowledge of dynamic or vital force in individuals. My own wish is to arrive at some rational conclusion or adaptation of the remarkable facts which I know exist, and which I believe, in the economy of the laws of the universe, portend an addition to the wonderful discoveries of this age in the progress of mankind. PUEBLA.

COLUMBUS, Ohio, Sept. 10, 1866.

DIVIDENDS.

The Stout Coal Company have declared a dividend of 5 per cent. payable at 44 Trinity Buildings, N. Y., on October 1st, 1866. The United States Petroleum Company, a dividend of 3 per cent. for September, at 38 Pine street, N. Y., on Oct. 1st. The Bemus Heights Petroleum Company a dividend of 6 per cent. for August and September, at 23 William street, on Oct. 1st.

MEETINGS.

Perry and Peoples' Mining Company, adjourned annual, at 71 Broadway, on Sept. 29th at 3:30 P.M. Phœnix Lead Mining Co., directors, at 43 Beaver street, N. Y., on Oct. 1st between 3 and 4 o'clock P.M. Columbia County Iron Mining Co., trustees, at 77 Cedar street, N. Y., on Oct. 24. Montana Gold Mining Co., directors, at 43 Beaver street, N. Y., on Oct. 3, at 12 M. Consolidated Gregory, for reducing capital stock, at 35 Wall street, N. Y., on October 12th, at 11 A.M. The Shale River Petroleum Co., trustees, at 5 Pine street, N. Y., on Oct. 1st, between 12 and 1 o'clock. Maple Grove, trustees, at 41 Fulton street, N. Y., on Oct. 1st, between 12 and 1 P.M.

Original Papers.

[PREPARED FOR THE JOURNAL OF MINING.]*

THE UTILIZATION OF SODIUM IN GOLD AND SILVER AMALGAMATION.

By Professor HENRY WURTZ, of New York.

[CONCLUDED.]

The negative results of one experimenter, especially when based upon an incorrect understanding, weigh little against the concurrent positive results of many others. To show that others, versed in the amalgamation of of silver ores, do not concur with Mr. Kustel in his opinions, I shall quote Mr. S. R. Kimball, a conductor of important metallurgical works in San Francisco, who writes April 14, 1866, to the *Mining Press* of that city, as follows:

> I have probably had more practical experience in the use of sodium for extracting the precious metals, than any other man, and have been very much excited by its beneficial results. As Messrs. Silliman and others have given statements of several practical workings, it is unnecessary for me to make any. I am satisfied they are correct, as they correspond with my workings, both with and without sodium. I notice my friend, Mr. G. Kustel, has been making some experiments with sodium on argentiferous ores, with rather poor results. I hope he will not discard its use without making more experiments, with different proportions. If he does, I think he will agree with me.

Another Californian writer has thrown out the suggestion that the difficulty of enfilming the particles of gold with quicksilver, is due to strongly adherent films of air; and having observed, he says, that certain metallic powders are more easily wetted by *water* when the latter contains a caustic alkali, he imagines some obscure analogy between this case and the enfilming of gold by quicksilver, and then reasons therefrom that the virtues of the sodium must be wholly attributable to the *caustic soda* formed by its oxydation, and that the latter may be substituted for it. Had he made *experiments* upon some native gold before making his hypothesis, the latter would probably have never been made. The air-film idea occurred to me early in my investigations; but finding that under alcohol and *in vacuo* the refractory gold did not amalgamate better, I abandoned it. I may add that the effect of sodium is the same when no water is present at all. In England, also, some results of practical workings have been brought out. Mr. Thos. Belt writes to the London *Mining Journal*, among other things, that in comparative experiments made upon 500 lb. lots of auriferous galena, which assayed something over 13 dwts. of gold per ton, quicksilver alone extracted but 6½ dwts.; and with sodium 13½ dwts., or the whole contents. Mosheimer has communicated to the *Press* the results of other Welsh experiments. He says:

> T. A. Readwin wrote to me, about eight months ago, that he is making experiments in North Wales, England, with sodium-amalgam. He informs me that he uses small iron pans and my amalgamators; an equal number of pans being worked with and without sodium. The result has been that at least 30 per cent. more gold was produced with sodium than without its use. He has promised to give me further results of his experiments as they transpire, which in due time, Messrs. Editors, I will transmit to you.

There are in England, however, also, a few who cavil at the new innovation. A correspondent of the London *Mining Journal* objects chiefly, so far as he can be understood, because the "*sodide of gold*" has not yet been discovered. Another oracularly writes that "the sodium process is alike unphilosophical and commercially impracticable," I shall but allude briefly to the conflicting claim to priority of discovery which was entered by Mr. Wm Crookes, one of the most learned, industrious and successful of the English scientists. The graceful concession of this point, which Mr. Crookes is considered of late, both by scientists and jurists, to have, made by his own silence and by publications in the journals ostensibly authorized by him, it is thought will not prove any appreciable detraction from the laurels so well and worthily won by him in the field of chemical discovery. The most surprising articles elicited by this discovery, in transatlantic journals, have emanated from certain persons who have denied the authenticity of the discovery altogether, and claimed that the use of sodium in amalgamation of ores has already actually been a matter of publicity for centuries. Mr. John Calvert and another writer (anonymous) have put forth the astounding assertion that extracts can be "given from more than one hundred works in various languages," showing that not only sodium but magnesium had been used in this way from time immemorial. Three works are referred to by name—Schwartz's "Alchymia de Salabus," Albaro Alonso Barba's "Art of Metals," and Roger Bacon's "Ars Omnia." Schwartz's book probably does not exist on this continent, but I have been so fortunate as to find a copy of the very edition of Barba referred to, in the hands of Prof. George J. Bush of Yale College, who kindly lent me the precious volume, and he exhibited it to the Section. As could have been anticipated, there is nothing in it indicating, in the remotest manner, a knowledge of sodium much less of its use in amalgamation. I must, however, express my surprise to find that, at the time this book was written, in 1640, almost every refinement in the art of amalgamation, and in other branches of gold and silver metallurgy practised at the present day, except the use of sodium (and not excepting many supposed to be especially of modern origin) was known and used by Barba and his cotemporaries. As regards the still more ancient work of Schwartz referred to I can merely remark that I believe it may be said with reason that a person of lively imagination could find plainly set forth, in the jargon of the alchemists, every one of the discoveries of the nineteenth century, beside a multitude of other discoveries either yet to be made or never to be made. The third work named, that of Roger Bacon, it appears has never been published, but exists, according to Mr. Calvert, as a manuscript of immense magnitude; from which he copies the following from a passage on "The Metal of salt," under the heading of "The Magic of Salt:"

> It is well that the vulgar understand not the good and great art of salt, as if it were known to all, riches would no longer be held rare, or even respected, as with this metal much gold can be obtained, and such great virtue doth it contain, that one piece of such size that will cover the top of the small finger will work wondrous magic throughout a great mass of such worthless stuff that no man would buy for the smallest coin; yet when this and other metals we l known to all men, shall lovingly and speedily unite in one common mass, then the adored of all metals becomes life, and is born unto man, and true and real gold may be taken from those common metals without loss to them of weight or virtue, so that by great craft, cunning and magic, not enjoyed by common men, good gold, never again to be lost, is transmuted from the vilest dross; and so men may enjoy riches without prying into other's money-bags, or borrowing from those who have little to lend.

This is, of course, set forth by Mr. Calvert as his own translation of the original Latin manuscript, and is interpreted by him as relating to the extraction of gold from ores by amalgamation. But I cannot recognize the possibility of any such interpretation, and believe that all attentive readers will concur with me in regarding it rather as describing merely one of those obscure and apochryphal methods of transmuting other metals into gold in which the alchemists so abound; and I have to suggest that, even were it an unmistakable description of the use of sodium in amalgamation, it would still have no bearing whatever on the question at issue, not being cited from a *published* work, but from one which has probably been as much concealed from the public eye as if it had been newly exhumed from the catacombs of Egypt. I cannot moreover help saying that the tendency extant in some quarters to exalt the chimeras and fantasies of the alchemists into the rank of oracular utterance, thus erecting a sort of chemical mythology, is as much to be deprecated as would be an opposite tendency, to underrate and ignore the few kernels of good grain which they really did sow by the wayside, and which have since sprung up and borne such goodly fruit. The last branch of the subject I shall touch upon relates to the very recent and wonderful announcement from an unknown source, so widely and persistently paraded in the public press, of the amazing *explosiveness* of the amalgam of sodium; one of the most prominent of the New York dailies having, for example, set forth in a leading article, that while metallic sodium is a "harmless substance" (an erroneous statement so very grave and fraught with danger as to be inexcusable even on the plea of ignorance), on the other hand, "the terrors of nitro-glycerine itself dwindle into insignificance when compared with those of the new compound termed sodium-amalgam;" and that "one ounce of sodium-amalgam is equal to twenty-five pounds of gunpowder,"† and similar rubbish *ad nauseam*. With regard to this latter comparative statement, I would remark that according to this, the samples of sodium-amalgam lying on the table before me are equal to six tons of gunpowder; and I have often made with my own hands in one day, and in one operation, a quantity equal to 100,000 pounds of gunpowder. My only object in even alluding to a matter which I am aware is to a chemist merely,

> "A thing for laughter, fleers and jeers,"

is to explain the cause and origin of such a fantastic and apparently puerile hoax. It was simply an ingenious but futile *commercial trick*, the motive for it having been the hope of embarrassing the transportation and introduction of amalgams of sodium into the mining regions by those legitimately entitled to introduce it, until the completion of certain arrangements for infringing upon the patent rights that have been granted by the United States in the premises. [In the course of Prof. Wurtz's remarks, he was interrupted by questions from Profs. Stoddard, Perkins and Hadley. At the conclusion of the paper, Dr. President Barnard remarked that he felt great interest in the discovery made by Prof. W., and thought he might be regarded as one of the benefactors of the world in making two grains of gold available where there was but one before. In response to an inquiry, Prof. Wurtz said that the discovery would lead to an extensive development of the manufacture of sodium, aluminum, magnesium, calcium, &c.; to render them cheap and useful metals in the arts.]

* Read before the Buffalo meeting of the American Association for the Advancement of Science, Aug. 20th, 1866.

† These ridiculous statements were one and all denied by the JOURNAL OF MINING at the time. See pages 151 and 163, Vol. I.

[WRITTEN FOR THE JOURNAL OF MINING.]

SOUTHERN MINES.

By Dr. R. P. Stevens.

In the Journal of Mining, page 314, vol. I., I ventured the assertion, that there were many mines of gold in the southern portion of the Atlantic auriferous belt, that would bear capitals of fifty, seventy-five and one hundred thousand dollars—while there were not many that would bear capitals of millions. This assertion was founded upon the following data:

1st, the fact, well authenticated, that a great number of persons had, previous to the rebellion, made from the crude appliances then used, the various sums above mentioned. In no mining region of the United States have I ever found so many instances of similar good fortune.

North Carolina has produced thirty millions of dollars. It has not cost dollar for dollar to raise. But many a well-stocked plantation in the cotton region has been purchased with the profits from gold mining. How many have been squandered by high and fast living? how many by idleness and dissipation? You hear of them in every neighborhood.

It was my pleasure to meet with many who had saved their fortune, and are now quietly enjoying the fruits of their industry and enterprise.

2nd. Upon the quality of the ore, all that lies above the line of water level, is usually decomposed pyrites containing free gold. It is easily raised to gross, and as easily reduced to bullion.

If From any vein two to two and a half feet wide, it need not cost over six dollars per ton to obtain all the gold, within ten per cent. of the fire assay—and as very many veins will give twenty dollars and over per ton—the margin for profit is very apparent. I knew of veins fifty feet wide that will net four dollars per ton, and I have now in my eye a property of gold and silver lodes, sixteen in all, every one of which will yield over twenty dollars, and some of them eighty and one hundred.

3rd. Upon the assay and working of ores: The ores I brought home with me were not selected. The fair average of the whole vein was taken, and in some instances, the clays alongside of the veins. Below are the results for working samples, from one hundred pounds to half a ton.

WORKING ANALYSIS OF SOUTHERN GOLD.

			Process.	Thickness of Vein.
No. 1,	Per ton	$ 31	Wyckoff	2 feet.
2,	"	125	Bulloks	30 inches.
3,	"	100	Sodium	
4,	"	80	"	
5,	"	39	Bullock	18 inches.
6,	"	87	"	2 feet.
7,	"	76	"	
8,	"	12	Chilian Mill	50 feet.
9,	"	15	"	3 feet.
10,	"	34	Bullock	
11,	"	20	"	18 inches.
13,	"	20	"	2 feet.
14,	"	200	Chilian Mill	2 feet.
15,	"	19	"	2 feet.

To the above table I might add many more, and may perhaps in a future number. Enough has already been tested to confirm me in my position. That moderate outlay of capital, judiciously invested, and prudently managed, will surely reward the investor.

Indeed I know of no portion of our country, where men wishing to manage their own money in some kind of manufacturing business, could do it to better advantage than in separating the brown oxide of iron from the precious metals, in the gold belt of North Carolina, South Carolina, Georgia and Virginia.

MARKET REVIEW.

Friday Evening.

Mining Stocks.—There is great speculative activity in the Stock Market, with considerable changes in the values of stocks. American Flag has advanced during the week from $2 70 to $3 90. Corydon from $5 15 to $5 13, Downiesville gold from $1 77 to $1 80, Rocky Mountain from $7 50 to $6, Smith & Parmelee from $11 65 to $11 80, Texas from 45c. to 51c., Canada copper from 55c. to 80c. Quartz Hill is quoted at $6 35. Consolidated Gregory, which rose to $18, has fallen to $17; Gunnel gold to $1 28. There is no particular change to notice in Petroleum Stocks.

		Offered.	Asked.
Coal Stocks.—	Pennsylvania Coal	155	158
	Central Coal	52	55
	Cumberland Coal, preferred	55½	55¾
	American Coal	57	60
	Wilkesbarre Coal and Mining	57	58
	Spring Mountain Coal	—	80

Government Stocks are somewhat higher; 6 per cent. '67, 135½; Registered, '81, 111⅝; 5.20, '62, 108¾.

Gold.—The downward movement received a check yesterday which is sustained to-day. The price at 2 P. M. was 145¼. Foreign exchange is firm. Bills at 60 days on London, 107 @ 107¾ for Commercial; Bankers', at short sight, 109 @ 109¼; Paris at 60 days, 5.20 a 5.17½; Hamburgh, 35½ a 36.

Iron.—There has been much activity in Scotch pig, and prices are firm at $47@49c. In American there is a greater demand than the furnaces can supply; they are, in fact, sold up to the end of November. Sales of 1800 tons American No. 1, at Hudson, are noted at $48; 1500 tons No. 2 ex. $46. The demand for Bar is slacker. Store prices are reduced $5 per ton.

Copper is without change. As the supply is small, holders are very firm.

Tin is without change. There has been a fair demand, as late for tin plates.

Lead is in small supply, with fair demand. Prices are firm, closing at $6 87½ for Spanish and German refined. $6 87½@ $7 25 for English—all gold.

Spelter is dull, but steady, at 6½c., gold; for foreign, and 11@ 11½c., currency, for domestic.

Petroleum is dull. Crude 40 a 47 gr., in bulk 17½ a 18c.; in barrels 25 a 25½; refined 37 a 38c.; free oil 57 a 62c.

THE COAL TRADE.

Friday Evening.

Foreign coal is in deficient supply. Sales of Liverpool Orrel are made at $15, and Liverpool House Cannel at $17. The auction sales of Scranton coal on Wednesday was largely attended, but the bids were mostly made by consumers or retail merchants. The prices obtained were considerably under those of last sale, except for grate and egg, which are unchanged. The following is a list of prices, as compared with the last sale:

TONS. SEPT. 26, 1866.		TONS. AUG. 29, 1866.	
5,200 Lump	$4 50@$5 25	10,600 Lump	$5 25 @$5 87½
7,800 Steamboat	5 00@ 5 25	6,000 Stmbt.	5 25 @ —
2,300 Grate	5 15@ 5 25	8,000 Grate	5 12½@ 5 25
4,900 Egg	5 45@ 5 55	5,000 Egg	5 25 @ 5 55
2,550 Stove	6 57@ 6 60	5,000 Stove	6 65 @ 6 90
4,700 Chestnut	4 10@ 4 25	6,000 Chestnut	5 00 @ 5 37½

The returns of traffic for the week ending September 22d, as compared with those of the corresponding week last year, are as follows:

	1865.		1866.			
	WEEK.	TOTAL.	WEEK.	TOTAL.	INCREASE	
Del & Hudson	370	473,881	40,285	994,978	521,097	
Lehigh Val. R. R.	48,854	1,046,066	32,159	1,404,022	357,955	
Lehigh Canal	31,708	566,736	32,869	740,892	174,156	
Pa. C. Co., by R. Road	.....	369,283	19,206	279,237	decline 71,891	
by Canal	.....		827	18,154		
Hunt'n & Broad Top R	.....	219,069	7,094	199,808	19,861	
Scranton North	.....	.....	8,019	.....	.....	
Scranton South	.....	.....	20,194	.....	.....	
Schuylkill Canal	.....	.....	.....	.....	.....	

Prices of Coal by the Cargo.

At New York, Sept. 28, 1866.

Schuylkill Red Ash by Boat Load	$7 00@	$7 25
" Chestnut, " "	4 50	5 00
" White Ash Lump	6 25	6 75
" Steamboat	6 25	6 75
" Broken	6 25	7 00
" Egg	6 50	7 00
" Stove	6 50	7 00
" Chestnut	4 75	5 25
Lehigh White Ash Lump	7 25	....
" Steamboat	7 25	....
" Broken	7 00	....
" Egg	7 00	....
" Stove	7 25	....
" Chestnut	6 25	....

At Philadelphia, Sept 28, 1866.

Schuylkill Red Ash Prepared	$5 50@	$5 75
" Chestnut	4 00	...
" White Ash Lump and Steamboat	5 25	...
" Broken	5 25	...
" Egg and Stove	5 50	...
" Chestnut	4 00	...
Locust Mt. Lump, Steamboat	5 25	...
" Broken	5 25	...
" Prepared	5 50	...
" Chestnut	4 25	...
Lorberry Coal	6 00	...
Franklin, (Lykens Valley)	6 25	...
Broad Top	5 50	...

Scranton Coal at Elizabethport.

Lump	$5 25@	— —
Steamer	5 50	— —
Grate	5 65	— —
Egg	5 75	— —
Stove	6 50	— —
Chestnut	4 75	— —

Prices for Pittston Coal at Newburgh.

Lump, per ton of 2240 lbs	$6 75	...
Steamer, " " "	6 85	...
Grate " " "	6 90	...
Egg " " "	7 00	...
Stove " " "	7 25	...
Chestnut " " "	6 00	...

70 cents per ton additional for delivery at N. York

(The prices of Pittston Coal are merely nominal, the Company doing little at present.)

Lehigh Coal at Elizabethport.

Lump	$7 25@	— —
Steamboat and Broken	7 00	— —
Egg	7 00	— —
Chestnut	6 00	— —
Stove	7 25	— —

George's Creek and Cumberland Coal.

Run of mine, f. o. b. at Locust Point	$5 75@	...
At Georgetown	5 50	...

At Baltimore, Sept. 29, 1866.

Wilkesbarre & Pittston W. A., wholesale	$7 50@	$7 75
" " " retail	8 50	8 75
Lykens Valley & Sunbury R. A., wholesale	7 50	7 75
" " " retail	8 50	8 75

Prices of Foreign Coals.

[REPORTED FOR THE JOURNAL OF MINING.]
BY H. L. PARMELEE & BRO.,
32 Pine street, N. Y.

September 28, 1866.

Liverpool Gas Coking	$10 75
" Cannel	14 00
" House	18 00
" Orrel	16 00
Western Virginia Gas Coal	10 00

Per ton 2240 lbs.

Prices of Provincial Coals.

[REPORTED FOR THE JOURNAL OF MINING.]
BY LOUIS I. BELLON I, JR.,
43 Pine street, N. Y.

Block House (on board)	$2 00 gold.
Gownie	2 00 "
Lingan	1 75 "
Sidney and Pictou	2 50 "
Glace Bay	2 00 "
International Co.'s	1 74 "
Slack Coal	75 "

Some coal from the Provinces has been sold as low as $7, currency, delivered.

Foreign Freights.

Sydney to N. Y.	$4 25
Lingan	4 50
Cow Bay	4 50
Glace Bay	4 50

Coal Freights.

From Newburgh.

Stamford	$1 60@	...	Greenbush	$ 55@	...
Norwalk	1 60	...	Coeymans	50	...
Bridgeport	1 60	...	Coxsackie	45	...
New Haven	1 60	...	Stuyvesant	45	...
New London	1 75	...	Hudson	40	...
Norwich	1 90	...	Catskill	40	...
Mystic	1 75	...	Saugerties	40	...
Stonington	1 75	...	Barrytown	40	...
Bristol	1 95	...	Rhinebeck	30	...
Newport	1 95	...	Poughkeepsie	25	...
Fall River	1 95	...	Fishkill Landing	20	...
Providence	2 00	...	Cold Spring	30	...
Dighton	2 00	...	West Point	30	...
Warren	2 00	...	Peekskill	40	...
Pawtucket	2 15	...	Haverstraw	45	...
Boston	2 10	...	Sing Sing	50	...
Troy	60	...	Nyack	50	...
West Troy	60	...	Tarrytown	50	...
Albany	55	...	Yonkers	55	...
New York	70	...			

From Elizabethport.

New York	$ 70@	— —	Portland	2 00@	2 10
Fall River	1 55	— —	Newburyport	2 30	— —
Newport	1 60	— —	New London	1 60	— —
Boston	1 65	— —	Pawtucket	2 00	— —
Norwich	1 80	— —	Taunton	1 25	— —
Providence	1 60	— —	New Haven	1 25	— —
Norwalk	1 25	— —	Portsmouth	2 25	— —
Middletown	1 70	— —	New Bedford	1 80	— —
Hudson	1 10	— —	Bridgeport	1 25	— —
Lynn	2 35	— —	Hartford	1 65	— —
Salem	2 00	2 10	Albany	1 10	— —

From Port Richmond, Philadelphia.

Reported by the Coal Exchange, Sept. 27.

Albany (& towing)	$1 70@	— —	Neponsett	$0 00@	.. ..
Alexandria	1 60	— —	Newark	— —	— —
Appanang	2 00	— —	Newburyport	2 40	— —
Bath	2 25	— —	New Haven	2 25	— —
Baker's Landing	— —	— —	New London	2 00	— —
Bedford	— —	— —	Newport	2 00	— —
Boston	2 00	2 20	Newport, R. I.	— —	— —
Bridgeport	2 00	— —	New York	1 70	— —
Bristol	1 90	— —	Norfolk	1 50	— —
Cambridgeport	2 40	— —	Norwalk	2 20	— —
Catskill (& tow)	2 00	— —	Norwich	2 00	— —
Charleston, S. C.	2 50	— —	Parkshell	— —	— —
Charlestown	2 10	— —	Pawtucket, & tow'g	2 25	— —
Chelsea	2 15	— —	Petersburg	2 00	— —
Commercial Point	— —	— —	Portland	2 00	— —
Cohasset Narrows	2 40	— —	Portsmouth, N. H.	2 50	— —
Davenport	— —	— —	Providence	1 75	— —
Dighton	— —	— —	Poughkeepsie, & t'g	1 70	— —
Dorchester Point	— —	— —	Quincy Point	— —	— —
East Cambridge	1 75	— —	Richmond	2 00	— —
East Greenwich	2 00	— —	Rockland	2 25	— —
Fall River	2 20	— —	Roxbury	2 50	— —
Fredericksburg	— —	— —	Saco	— —	— —
Gloucester	2 35	— —	Saugus	2 50	— —
Hartford	3 05	— —	St. Johns (in gold)	2 00	— —
Hudson	..	— —	Salem	2 00	— —
Ipswich	2 60	— —	Savannah, Ga	2 50	— —
Jamtown and tow	..	— —	Stonington	2 25	— —
Kennebrook Point	— —	— —	Troy	— —	— —
Lynn, and disc'ge	2 50	— —	Washington, D. C.	1 60	— —
Milton	2 50	— —	Weymouth't'xpil'g	2 25	— —
Malden	2 50	— —	West Point & tow	1 70	— —
Medford	— —	— —	Wilmington	2 00	— —

From Georgetown or Alexandria.

To Philadelphia	$2 00	— —	Boston	3 00	— —
New York	2 25	— —			

From Baltimore.

To Philadelphia	$1 75@	— —	Boston	2 50@	— —
New York	2 00	— —			
do by Canal	2 25	— —			

Freights on Coal to Elizabethport.

L. V. R. R. from Mauch Chunk to Easton	$1 15
C. R. R. of N. J., Easton to Eastport	1 70
	2 85
Shipping expenses to Eastport	25
Total	$1 10

Canal Expenses from Mauch Chunk to N. Y.

Lehigh Canal (net)	58
Delaware Division Canal	42
Delaware & Raritan Canal	50
Towage, New Brunswick to New York	25
Freight, Mauch Chunk to New York	$1 55
Total	$3 30

Via Morris Canal.

Lehigh Canal	58
Morris "	90
Towage	12½
Freight	$1 75
Total	$3 35½

WEEKLY COAL TRADE CIRCULAR.

The Scranton sale of Sept. 26th, where 40,000 tons of coal were sold at public auction, showed a decline on the average of 33 cents per ton as compared with the previous sale. On Lump and Chestnut sizes, the demand for which is very inactive, the decline ranged from 75 cents to $1 per ton. It is generally believed that prices have "touched bottom," as the current prices for coal (with the present high rates of transportation and the current high rates of wages paid to the miners and laborers,) do not pay the cost of production. Many collieries in the Schuylkill region have stopped during the past week, and unless the market changes soon—of which there are no favorable symptoms at present writing—others, in fact all, must do likewise, till the demand again equals the supply, and prices rally to cover at least the cost of production.

L. A. & Co.

FOREIGN MARKET REVIEW.

Weekly Metal Report.

LONDON, September 7, 1866.

The improved feeling in the metal market reported last week has not been fully maintained. There is more desire to realize, while buyers are not quite so eager, the reduction in the rate of discount to 5 per cent. having been without influence on prices.

IRON.—The reports from Wales and Staffordshire are satisfactory. Orders, though not plentiful, are coming in gradually. Scotch pig iron has steadily advanced to 55s. 6d. cash.

COPPER.—The market is a little unsettled through the action of the smelters, some having declared an official advance, while others adhere to official quotations, without, however, taking orders at the price. On the whole, prices are well maintained. For Burra, £90; Wallaroo, £89; and Kapunda, £94 is asked. Chili slab, £81 and £82.

TIN.—Straits is easier, and business reported at £82 and at £81 cash. Banca, £84 and £85. English maintained at official quotations.

TIN PLATES without change in value.

LEAD continues to maintain former quotations.

SPELTER.—The market has been firm, but the amount of business of no importance. Common brands in London, £20 5s. to £20 10s.; specials here, £20 15s.; in outports, from £20 15s. to £21; W. H., £21 7s. 6d.

VON DADELSZEN & NORTH.

NEW YORK METAL MARKET.

(CORRECTED WEEKLY.)

COPPER	Ingot..Lake Superior, ₱ lb., cash.	.. 30¼	.. 31½
	Baltimore	.. 32	.. ..
	Pig Chili	.. ..	.. ..
	Bolts	.. 43	.. ..
	Braziers	.. 42	.. 43
	Sheathing	.. 45	.. ..
	Yellow metal	.. 32	.. ..
IRON	Pig.....No. 1 Scotch, ₱ ton	45 00	49 00
	No. 1 American	48 00	50 00
	No. 2 "	45 00	46 00
	No. 2 Charcoal	.. ..	.. ..
	Bar.....Swedish, ordinary sizes	170 00	.. ..
	Amer. and Eng refined	125 00	145 00
	" common	115 00	120 00
	Rails, American currency	.. ..	.. ..
	" English gold	.. ..	.. ..
	Horse shoe iron	150 00	160 00
	Rods 5-8@3-16rd. and sq	130 50	185 00
	Hand	155 00	.. ..
	Nail rods, 5-8 and 3-16	122 50	185 00
	Hoops	160 00	225 00
	Sheets, Russian, ₱ lb	.. 28	.. 30
	" English "	.. 6¼	.. 9
	" American "	.. 25	.. 25½
	Boiler Plates, English	.. ..	.. ..
	" American	.. ..	.. ..
STEEL	Best cast in bars, war	.. 25	.. ..
	Best sheet cast, "	.. 25	.. ..
	Best cast circular saw plates 46 in.	.. 31	.. ..
	Double shear steel, war	.. 25	.. ..
	Single " "	.. 22	.. ..
	Montague & Co. C. S., in bars	.. 22	.. ..
	Round machinery cast	.. 16	.. ..
	Best German	.. 16	.. ..
	Government German	.. 13	.. ..
	Fagle German	.. 15	.. ..
	(L.) Blister, war	.. 21	.. ..
	W. Jessop & Sons, blister, war	.. 18	.. ..
	Double refined	.. 26½	.. ..
	Stone Axe shapes	.. 26½	.. ..
	Common blister	.. 15	.. ..
	2d quality sheet	.. 22	.. ..
	3d quality sheet	.. 18	.. ..
LEAD	American, per 100 lbs	.. ..	.. ..
	German.....Gold	6 80	7 00
	Spanish "	6 87½	7 00
	English "	6 87½	7 25½
	Bar, per 100 lbs	10 50	.. ..
	Pipe and sheet	10 70	.. ..
TIN	Banca Gov., per 100 lbs. gold	24½	.. ..
	Straits	22	.. ..
	English	21¾	.. ..
TIN PLATES	IC 10-14 prime charcoal	15 25	.. ..
	IX 10-14 " "	18 25	.. ..
	IC 12-12 " "	15 75	.. ..
	IX 12-12 " "	18 75	.. ..
	IC 14-20 " "	16 25	.. ..
	IX 14-20 " "	19 25	.. ..
	IC 14-20 Roofing ch. 1st	15 25	.. ..
	IC 14-20 " " 2d	14 00	.. ..
	IC 14-20 " Coke	11 00	.. ..
	IC 10-14 Coke	11 00	14 50
SPELTER	Lehigh, per lb., currency	.. 11½	.. ..
	Foreign " gold	.. 6½	.. ..
ZINC	Mussulman & Amer	.. 13½	.. ..
SOLDER	No. 1	.. 24	.. ..
	No. 2	.. 22	.. ..
QUICKSILVER		.. ..	.. ..

SAN FRANCISCO STOCK MARKET.

Latest by Telegraph.

SAN FRANCISCO, Sept. 26.

Name.	Bid per foot.	Name.	Bid per foot.
Gould & Curry	600	Crown Point	900
Savage	1110	Yellow Jacket	870
Chollar-Potosi	110	Belcher	90
Ophir	200	Alpha	50
Hale and Norcross	1600	Imperial per share	85
Cal. Steam Navigation Co.	—	Cal. State Telegraph Co	

The Blowing Cave of Georgia.

Blowing Cave, says a correspondent of the Mobile *Times*, is situated on the plantation of Col. David Barrow, Decatur county, Ga., twenty-seven miles from Thomasville, the terminus of the Savannah and Gulf Railroad. The cave is at the bottom of a small, natural basin, (whose diameter will not at any point exceed thirty feet,) in a perfectly smooth plain, and surrounded with a dense copse of wood. There are no indications to lead to the supposition that it was occasioned by any eruption of a volcanic or convulsive nature, as the face of the surrounding country, as well as the immediate neighborhood of the cave itself, is wholly free of stones, ruggedness and other marks of convulsive action. When first discovered and brought into notice by Cols. Barrow and McKinley, in 1836 or 1837, the orifice of the cave was three or four feet to the left of the present one, and much larger. Col. McKinley proposed exploring it, but in attempting to sound it with lead and line he failed to touch bottom, and gave up the undertaking as too hazardous for further venture. The present mouth of the cave is about one and a half feet in diameter, through which, at one period of the day, there issues a strong current of air, not in puffs, but a continuous stream, with a roar that is heard at a distance of 60 or 70 yards. In the winter of 1864, in company with several ladies, I visited the cave at the time of its *blowing out*; and by way of experiment, one of the ladies threw her veil into the mouth of it, which was blown into the air to the height of six or seven feet. I then threw my hat—a heavy woolen one—into it with a like result. Several articles heavier than either of the above were tried, but immediately expelled. At another period of the day the suction is relatively as great. Any light article held near the orifice is instantly drawn into the cave. Dr. Cotton, the State Geologist, a gentleman of high scientific ability, visited it at the solicitation of Cols. McKinley and Barrow, and gave it as his opinion, that these reversed phenomena was caused by the ebb and flow of the tide, and that the cave was originally one of the fathomless lime sinks so numerous in that portion of Georgia.

A "Swindling" Concern.

The Black Hawk *Journal* of August 21st pitches into John Wetherbee, and his Crosby & Thompson Process, without gloves. The occasion is the receipt of Wetherbee's "statement to the stockholders of the Excelsior Mining Company of Colorado." This statement, says the *Journal*, consists of praises for one Tompson, "casting of shadows" on Behr & Keith and Lyon, and the Hope Gold Company, and then furnishing a false sunlight in which to view the *immense* advantages of the Crosby & Thompson Process, which by Coloradans cannot be seen in that light nor any other. This tirade against Behr & Keith, comparing their process so unfavorably with that of Crosby & Thompson, is simply ridiculous, for the two mills now running on the Behr & Keith plan are weekly taking out more gold than has been jointly taken out by the dozen or fifteen C. & T. machines which have been started in this country, during all the time which they have run. None of the thirty odd machines of the C. & T. process which have been sent to this country are now running. Why is it that this "perfect success" is a perfect success only in starting and stopping? It is because the shafts and cylinders burn out? or it is because the dydrostatic or hydraulic amalgamator does not work? It is because they do not steal *all* of Elliott's ideas, including the "gum?" * * * * Some thirty odd companies have been swindled by this concern, and more may be if they believe Wetherbee "now knowing exactly what is wanted, a very little time and small expense will make it perfect." Oh! Perfection! The thing is far from being "perfect in principle," for after passing ores through, the gold will not amalgamate with mercury. We have knowledge of cases where gold could be readily panned from the untreated ore, and after treatment by this "perfect success" not a color of gold could be panned therefrom; the free gold being completely coated by some of the volatile constituents of the ore. Let interested parties apply to the Noble Company, to the Monitor Association, to the Alliance Co., to the Manhattan Co., to the Colorado Co. of Boston, to the Montezuma Co., etc., for information as to the practical working of this machine. We will leave the chemical questions raised by the "perfect" man to the chemists, who will undoubtedly dispose of him, when he gives facts to prove his very doubtful assertions. Suffice it to say that the C. & T. machine never has worked—John Wetherbee—its vaporous blower, to the contrary, notwithstanding.

Tinning Iron.

There have been many methods proposed and patented for tinning iron, especially iron boilers or kettles for culinary purposes, from among which are the following:

By simple immersion. Dissolve 17½ oz. ammonial alum in 12 lbs. boiling water, and when dissolved add 1 oz. protochloride of tin. The articles to be coated are well cleaned, and then immersed in this liquid until they are sufficiently white. The ammoniacal salts last a long time, but tin salt requires occasional renewal.

By contact with another metal in a suitable liquid. Dissolve 10½ oz. bitatrate of potassa in 17½ parts water, and add ¾ oz. protochloride of tin, and boil it a few minutes. The articles to be coated are immersed in a solution, in contact with a piece of zinc of proportionate size.

By the Battery. Dissolve 11 oz. pyrophosphate of potassa or soda in 17½ lbs. water, and then add 4½ oz. protochloride of tin, and operate by the battery process with an anode of tin.

Patent Claims.

Interesting to Miners, Millmen, Metallurgists, Oil-Men and Others.

The following claims have recently been issued from the United States Patent Office:

58,085.—PUMP.—A. F. Fletcher, Athol, Mass.:

I claim a pump-box constructed in two or more parts, so arranged and combined as to secure the parts to each other, and the packing of leather or other suitable material to the pump-box, in the manner substantially as and for the purposes described.

58,085.—APPARATUS FOR GENERATING AND BURNING VAPOR OF HYDRO-CARBON OILS.—Henry R. Foote, Oil City, Pa.:

1st. The combined retort and gas-holder, constructed substantially as described.

2d. The coil of metallic tubing charged with iron filings, or their equivalents, and the heaters connected with the gas-holders, for the purpose of generating hydrogen gas by the decomposition of steam, substantially as and for the purpose set forth.

3d. The tubes at the bottom of the retort with supply-pipes elongated so as to extend into the gas-holder, as described.

4th. The arrangement of burners connected with the gas-holder, substantially as described.

5th. The hood attached to the bottom of the retort, for the purpose of protecting the lower burners, as described.

58,088.—AMALGAMATING GOLD WITH MERCURY.—M. Foreman and J. R. Mathewson, Philadelphia, Pa.:

We claim, 1st, The amalgamation of gold with mercury by circulating pulverized auriferous ore, combined with water, upwards through a body of mercury, substantially in the manner described.

2d. Heating the mass of auriferous ore and water by a jet of steam, which induces the above-mentioned circulation, substantially as specified.

58,089.—ORE QUARTZ-CRUSHER.—Joseph Fowler, Rahway, N. J.:

I claim, 1st, The yielding, eccentric-shaft, f or f, and weighted lever, g or g, applied in substantially the manner specified to keep the jaws at their lower ends towards each other, but allow them to open or yield, as and for the purposes set forth.

2d. The combination of the jaws, d and k, connecting-rods, l, l, and cranks, 1 and 2, 2, when the jaw, d, is connected directly to the crank, 1, and receives the movement specified for the purpose set forth.

3d. The links, e, in combination with the eccentric yielding bearing, f, and moving jaw, d, as and for the purposes set forth.

58,100.—DESULPHURIZING ORE.—John A. Hitchings, Denver City, Col. Ter.:

I claim, 1st, The arrangement of the crucible with its dome covering, sectional lid, and discharge openings, M, P, substantially as and for the purpose described.

2d. The combination with the crucible of the water-supply tank, K, as and for the purpose described.

58,113.—APPARATUS FOR DISTILLING PETROLEUM, ETC.—Orazio Lugo, New York City:

I claim, 1st, The admission of air or gas into the goose-neck or exit-pipe of the still, substantially as and for the purpose herein specified.

2d. Varying the point of admission of the air or gas, B, into the still and goose-neck, or exit-pipe, for the process of distillation progresses, substantially as and for the purpose herein set forth.

58,116.—ORE OR QUARTZ CRUSHER.—E. P. McCarthy, San Francisco, Cal.:

I claim the use of a rubber tappet, A, steel shod, the steel shoe, B, plate F, and bolts, F, F, combined in the manner and for the purposes set forth.

58,118.—BLOW-PIPE.—Josiah McFarland, Clinton, Ill.

I claim, in blow-pipes, a detachable air-chamber, A, in combination with the flexible tube having a suitable mouth-piece for directing the current of air or gas and a force-pump, all constructed and operated substantially as described.

58,145.—TUYERE.—Thomas Sinnott, Brooklyn, N. Y., and James McIntyre, New York City:

We claim, 1st, A series of wings or divisions around the blast-pipe with openings at alternate opposite ends to cause the air or blast to travel back and forth within the tuyere, for the purposes as set forth.

2d. The valve, t, attached to the block, m, in combination with the blast-pipe, a, for the purposes set forth.

3d. The movable nozzle, n, in combination with the tuyere, as and for the purposes specified.

58,149.—AMALGAMATOR.—Stephen G. Sturgis, Newark, N. J.:

I claim the flute or pocket, t, when attached to a reciprocating or revolving cylinder, in the manner and for the purpose substantially as shown.

Also the bolts, W, extending across as supports to the cylinder, when used in combination with the pocket attached to the cylinder.

58,150.—DEEP-WELL PUMP.—J. W. Summers, Tarr Farm, Pa.:

I claim, 1st, Suspending the piston of a pump from the pump rod by means of a ball and socket joint, substantially as described.

2d, I also claim the cylindrical stop, G, having its upper edge bevoled as shown, for the purpose of catching rivets and other objects, and directing them into the piston, substantially as described.

Mineral and other On-dits.

☞ In 1854 the quantity of coal raised in the United Kingdom was 60,661,401 tons; in 1855, 61,453,079 tons; in 1856, 66,045,450 tons; in 1857, 65,936,707 tons; in 1858, 65,008,649 tons; in 1859, 71,979,705 tons; in 1860, 80,042,698 tons; in 1861, 82,635,214 tons; in 1862, 81,678,338 tons; in 1863, 86,242,215 tons; and in 1864, 92,780,873 tons. It will be observed that up to 1858 the quantity of coal extracted annually made but little progress, while since that year it has enormously increased.

☞ C. C. Hinsdale, of Cleveland, Ohio, after experimenting many years, has discovered the process of making Bessemer steel iron, which has so long been kept a secret in Russia. A company called the "American Sheet and Boiler Plate Co.," is to be organized in that city, for the purpose of manufacturing the "Hinsdale Iron."

☞ A complete set of mining tools has arrived in Savannah from New York, belonging to a firm who are about working gold mines in the vicinity of Dalton, Ga. Numerous lumps of perfectly pure gold have been picked up in that city, some weighing several ounces.

☞ A mining company in Northern Louisiana, re-

cently struck a solid block of pure lead, weighing thirty-three tons. Other large blocks were found at a distance of eleven feet below the surface of the ground.

☞ In Arkansas iron is found in abundance in all of the northern counties, and is said to be of a superior quality; and coal is extensively found in the western counties of Lawrence, Marion and Fulton.

☞ In western Arkansas a silver vein has been struck, which for several days yielded eighty pounds daily, and then became exhausted. The owners are trying to find a continuance of the vein.

☞ A thick vein of coal has been discovered near Springfield, Ill. It is one hundred and fifteen feet below the surface. The mine is to be worked immediately.

☞ Peat is said to exist in very large quantities in Illinois.

All Sorts.

☞ The New Orleans *Times* says they have an ice machine in operation in Shreveport, La., which operates so successfully that the right of three parishes has been purchased of the owner for $30,000. "The company running one machine in Shreveport manufacture three thousand pounds a day, which readily sells at five cents per pound, giving an income of one hundred and fifty dollars per day. The expenses per day are thirty-two dollars, leaving a clear profit of one hundred and fifteen dollars."

☞ Experiments have very recently been brought to a conclusion before Sir John Packington and the other Lords of the British Admiralty, which prove that zinc sheeting is the best that can possibly be used for iron ships. Most careful and long continued experiments and much study had been devoted to the matter prior to a decision.

☞ The ice mountain eighteen miles from Romney, West Virginia, is described as a hill some three hundred feet high, at the foot of which issues a stream of ice-cold water, while on the side, by turning up the loose rocks, ice may be found in the middle of summer, the writer, as he states, having personally tested the fact.

☞ A Saratoga preacher recently "objected to so much mineralogy, physiology, chronology, and such other 'ologies' in young girls' education, and considered that for the purpose of a useful life a little more mend-ology, sweep-ology, and wash-ology would be far more desirable.

☞ A Frenchman, named Gallibert, closes his nostrils with a spring, takes a fire-proof filled with air, and fitted with tubes, the ends of which are in his mouth, and remains as long as nine minutes in a room densely filled with smoke without feeling exhaustion.

☞ Mrs. Jerome Patterson Bonaparte, of Baltimore, is writing her memoirs. Bayard Taylor is at his country seat, engaged upon a translation of Faust. Mr. George Bancroft is about to publish the last volume of his History of the United States.

☞ By a recent measurement, Lake Winnipiscogee is found to be six hundred feet above the level of the ocean, and Copple Crown Mountain fourteen thousand feet above the level of the Lake—making Copple Crown two thousand feet high.

☞ Our European exchanges announce the death of M. Mueseler, a celebrated Belgian engineer, inventor of the Mueseler Safety Lamp, which is heavier than the Davy Lamp, but burns less oil and gives nearly three times as much light.

☞ A company has been formed at St. Louis, with a capital of $1,000,000, with the design of buying ground and erecting comfortable dwellings, to let to the working classes at moderate rents.

☞ It is highly important, when a man makes up his mind tew be a raskall, that he shud examine hemself closly, and see if he ain't better konstructed for a phool.

☞ A young fel. near St. Joseph's, Mo., recently came in contact with the running gear of a thrashin' machine, and was thrashed within an inch of his life.

☞ An editor in Iowa has been fined $200 for hugging a girl in church. He expresses his grief that he isn't rich enough to pay such a fine every day in the week.

☞ The emigration of squirrels westward, which was noticed all over the State of Michigan a short time ago, is now being followed by a migration of bears.

☞ Silver plate belonging to the royal family of Saxony, sent to Prague, weighs thirty tons, and the Crown jewels ten tons.

☞ Molly Molasses is the name of an Indian woman an hundred years old, who is still weaving baskets at Belfast, Maine.

☞ The Colorado *Miner's Register* says that the patron saint of Colorado is Wilkins Micawber.

☞ Why are your nose and chin at variance? Because words are always passing between them.

☞ Bite not the finger which puts honey into thy mouth.

WHAT IS SAID OF THE "JOURNAL OF MINING" BY THE PRESS.

From the Saginaw (Mich.) Daily Enterprise, Sept. 6.

The American Journal of Mining is an admirable and able paper, published weekly, and edited by George Francis Dawson. Each number is sixteen pages size, and it contains a mass of information and current news scarcely equalled. Illustrations of the best class are given of the new styles of mining machinery and other matters and processes of popular interest. Terms $4 per annum. Address Western & Co., 37 Park Row, New York City.

From the Nevada (Cal.) Daily Transcript, Aug. 10.

We have received several copies of the American Journal of Mining, an illustrated paper of sixteen pages, devoted to the mineral and metallic resources of the American continent, edited in New York by George F. Dawson, formerly of this city. As the columns of the Journal draw largely upon the prolific resources of the Pacific Coast, it is a subject of peculiar interest to the people of this region. It seems to have reliable sources of information from all mining localities of any note throughout the entire continent, making it a work of great value, especially to parties interested in the development of our metalliferous wealth.

From the Portage Lake (Mich.) Gazette, Aug. 2.

American Journal of Mining.—A most excellent paper. * * *

PROSPECTUS.

THE NECESSITY FOR A THOROUGHLY RELIABLE medium of information upon MINING MATTERS has been seriously felt by those interested in the mines and mills of the United States. The American Journal of Mining supplies that want.

It is under the editorial control of George Francis Dawson, whose reputation is too well established to require, on our part, any comment.

There is amply sufficient capital invested in the Journal of Mining to insure its complete success.

The Journal of Mining contains—or will contain in future issues:

Seventeen wide, solid columns of condensed, summarized Mining (including Petroleum) intelligence from all parts of the American Continent.

Four to Five Columns of Editorial articles upon topics of interest to the mining community.

Two to Four Columns of original and selected papers on Mineralogy, Geology, Metallurgy, Assaying, Mining and other Scientific Subjects.

Five to Ten Columns of judiciously selected miscellaneous articles relative to mining, the kindred sciences, etc.

Carefully Compiled Directories of Petroleum, Gold, Silver, Copper and other American Mining Companies.

Latest Quotations of Mining and Petroleum Stocks in the New York, Philadelphia, Boston and San Francisco Markets.

Nevada Mining Stocks reported by Trans-continental Telegraph.

Latest Reports of the London and New York Metal Markets, with lists of Copper sales at Swansea and Redruth, England.

A valuable Table, showing the current market values of the various classes of Federal Securities.

A convenient list of the New York current prices of chemicals and implements used in Assaying.

A reliable list of Standard Works on Mineralogy, Geology, Metallurgy, Assaying, Mining, etc.

The Journal of Mining also publishes reports of scientific experts relative to noteworthy mines and works; and beautifully illustrated Descriptions of new processes and recent inventions in Mine and Mill machinery. It is printed in the best possible manner, upon a very superior quality of paper, and forms a compendium of trustworthy information that must prove invaluable to mine-owners, practical miners, Mineralogists, Geologists Metallurgists and others.

Each number of the Journal of Mining comprises sixteen pages of interesting and valuable reading matter; two volumes per annum, each containing Four hundred and sixteen pages, forming an excellent and almost indispensable work of reference for all interested in Mining, Milling, etc.

☞ Published every Saturday, at 12 o'clock, M.

TERMS

SUBSCRIPTION.		ADVERTISING.	
Per annum, one copy - -	$4 00	One Line [Nonp] I inser'n.	0 50
Six months, one copy -	2 25	One Square, 10 lines, 1 do.	2 00
Three months, one copy -	1 25	One Square, do. 4 do.	5 00
Single copy - - - -	0 10	One Square, do. one year.	40 00

Canadian Subscribers 25 cents extra for postage.

☞ Specimen Copies sent free.

Address WESTERN & COMPANY,
No. 37 Park Row, and 145 Nassau St., New York City.

THE

BISHOP GUTTA PERCHA CO.

The Original and Only Manufacturers in the United States of

PURE GUTTA PERCHA GOODS,

Gutta Percha Insulated Submarine Telegraph Cables,

Insulated Wire for Telegraph, Mining and Blasting Use.

WATER, BEER, AND SODA PIPE; CHEMICAL VESSELS, TISSUE SHEET FOR HATTERS, ARTIFICIAL FLOWER MAKERS, &c.

Factory, Nos. 208, 210 and 212 East 25th Street.

Office and Salesroom, 113 Liberty street, New York.

West of Broadway.

WALTER O. LEWIS, Esq., Electrician to the Co — SAMUEL C. BISHOP, General Agent. 25-ps

STEAM ENGINES.

HUBBARD & WHITTAKER,

102 FRONT STREET, BROOKLYN.

Manufacturers of

High and Low Pressure Steam Engines,

Also,

BOILERS, SUGAR MILLS, HYDRAULIC PRESSES, and TIN MEN'S TOOLS

Of all descriptions.

SHAFTING, PULLEYS, AND IRON AND BRASS CASTINGS.

Constantly on hand.

Send for Circular. 26-xm

COAL.

AMERICAN AND FOREIGN, BITUMINOUS AND ANTHRACITE,

FOR

MANUFACTORIES, STEAMERS, EXPORT, GAS AND DOMESTIC PURPOSES.

W. Saward & Co.,

65 TRINITY BUILDING,

111 BROADWAY. 27-i

CHARLES SILVER,

WHOLESALE DEALER IN

COAL.

Office, 19 Trinity Building,

111 Broadway, New York.

SOLE AGENT FOR

Buck Ridge, Shamokin, and Manchester Red Ash Coals.

Also constantly receiving DIRECT, FROM THE MINES, consignments of Lehigh, Locust Mountain and Schuylkill White and Red Ash Coals. 26-tf

AECHTERNACHT & CO.,

113 Broadway,

H. A. AECHTERNACHT. }
H. W. BRENTNALL, } NEW YORK.

AGENTS FOR	ALSO SHIPPERS OF
Preston Coal and Imp't Co.'s	Wilkesbarre, Lehigh,
and	Shamokin,
Jno. J. Dovey, Son & Co's	Cumberland and
Locust Mountain and Red Ash	Broad Top.

27-tf COAL BY THE CARGO.

Transportation Department

OF THE

SCHUYLKILL NAVIGATION COMPANY,

Joseph L. Wilkins,

General Agent,

No. 111 Broadway,

NEW YORK.

Wharf, Forty-seventh street, E. R.
27-tf Office, No. 7 Trinity Building.

FAMILY KNITTING MACHINES

FOR HOSIERY AND FANCY ARTICLES.

Manufactured by the

Dalton Knitting Maching Company.

OFFICE No. 569 BROADWAY, N. Y.

WM. JAS. EGGS, Secretary. D. P. RHOADES, Pres.

For Agencies and Circulars, apply as above. 26xm

LOUIS AUDENRIED & CO.,

Miners and Shippers of the following

CELEBRATED ANTHRACITE COALS,

FROM PHILADELPHIA AND THE MINES.

Diamond	Red Ash.	Locust Mountain	White Ash.
Spohn	" "	Black Heath	" "
Orchard	Pink "	Spring Mountain	Lehigh.
Broad Mountain	White "	Wilkesbarre,	

FROM ELIZABETHPORT AND JERSEY CITY.
Also, the superior CUMBERLAND COALS.
Lehigh, Hazleton, Council Ridge and Wilkesbarre Coals.

Broad Top.	Barton.	Barton.
Semi-Bituminous,	Georges' Creek,	Georges' Creek,
at Philadelphia.	at Baltimore.	at Alexandria.

205 Walnut street, PHILA. 14 Kilby street, BOSTON.
30 Westminster street, PROV. 24 Second street, BALTIMORE.
27-tf 110 BROADWAY, NEW YORK.

JOHN WHITE,

SHIPPER OF

WILKESBARRE COAL,

FOR STEAM AND FAMILY USE.

OFFICE.

27-i Room 21, No. 18 Wall street, N. Y.

E. A. PACKER & CO.,

MINERS.

SUGAR LOAF AND ROOM RUN

LEHIGH COAL.

OFFICE,

50 Trinity Building,

111 Broadway,

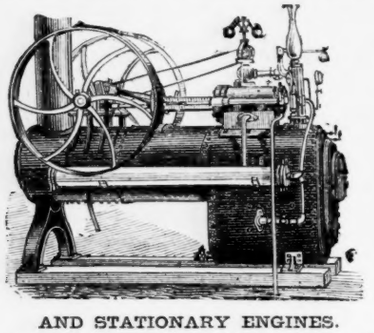
37-i NEW YORK.

FRANCIS E. ENGELHARDT, PH., DR.,
PROFESSOR OF CHEMISTRY IN ST. FRANCIS XAVIER'S COLLEGE,
Analytical and Consulting Chemist,
49 WEST FIFTEENTH STREET, NEW YORK.
Respectfully offers his Professional Services to
Miners, Manufacturers and Others.
CHEMICAL INVESTIGATIONS IN THE VARIOUS BRANCHES OF MANUFACTURING,
And
ANALYSES OF EVERY KIND
will be promptly and accurately executed. 23-tf

CHARLES P. WILLIAMS,
ANALYTICAL AND CONSULTING CHEMIST,
AND
MINING GEOLOGIST,
No. 138 WALNUT STREET, PHILADELPHIA.
Assays and Analyses of Ores, Soils, etc.,
Executed with Promptness and Accuracy.
EXAMINATION OF, AND REPORTS ON, MINERAL LANDS AND MINES FURNISHED ON APPLICATION.
10-ps

JULIUS G. POHLE, M. D.,
FORMERLY OF, AND SUCCESSOR TO,
Dr. JAMES R. CHILTON & CO.,
Analytical and Consulting Chemist,
No 489 BROADWAY, - - - - - - NEW YORK
(N. W. COR. OF BROOME STREET.)
Analyses and Assays made of Ores of Gold, Silver, Quicksilver, Lead, Copper, Manganese, Nickel, etc., etc.: Minerals, Alloys, Petroleum, Commercial Articles, etc 1-tf

STEAM ENGINES AT 175 WASHINGTON ST., between CORTLANDT and DEY STS., NEW YORK.
FOR SALE, THE
"JOS. CHAMPION" PREMIUM PORTABLE



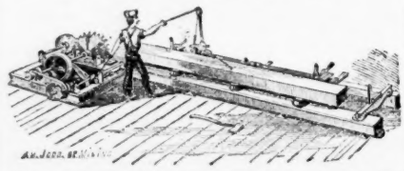
AND STATIONARY ENGINES.
Also, Circular Saw Mills and the Empire Shingle Machine. Factory, Jersey City, N. J. Send for a circular.
JOS. CHAMPION & CO.,
24-ps Manufacturers.

JAY COOKE & CO.,
BANKERS.
In connection with our houses in Philadelphia and Washington, we this day open an office at No. 1 Nassau street, corner of Wall, in this City.
Mr. EDWARD DODGE, late of CLARK, DODGE & CO., New York; Mr. H. C. FAHNESTOCK of our Washington house, and Mr. PITT COOKE, of Sandusky, Ohio, will be resident partners.
We shall give particular attention to the purchase and sale of GOVERNMENT SECURITIES, and to orders for purchase and sale of STOCKS, BONDS and GOLD.
JAY COOKE & Co.
New York, March 1, 1866. 9-ps

DUNCAN, SHERMAN & CO.,
BANKERS,
CORNER PINE AND NASSAU STREETS,
NEW YORK,
ISSUE
CIRCULAR NOTES & LETTERS OF CREDIT FOR TRAVELLERS,
AVAILABLE IN ALL THE PRINCIPAL CITIES OF THE WORLD.
MERCANTILE CREDITS
For Use in Europe, China, etc. Also Make
Transfers of Money to California & Oregon, by Telegraph.
12-ps INTEREST ALLOWED ON DEPOSITS.

For Sale.
SEVERAL THOUSAND ACRES OF VALUABLE BARYTES AND LEAD LANDS, well watered and timbered, and finely adapted to cultivation; with valuable improvements, situate in Washington county, in the middle of the great lead region of Missouri, and five miles west of the St. Louis and I. M. R.R. For particulars apply to
JOHN P. MURPHY,
one of the proprietors, stopping for a few days at the New York Hotel, or address him at Old Mines, Mo. The best of references given.

WINTER'S IMPROVED
PORTABLE CIRCULAR SAW MILL,
WITH ENGINE AND BOILERS, AND
Lane's Patent Set and Feed Works,
THE GREATEST IMPROVEMENT OF THE DAY.



The entire log of any length instantly and unerringly set at both ends at the same moment, by the sawyer, with a single motion of the hand. The Patentee, MR. LANE, OFFERS TO WAGER $10,000 that, from selected lumber, he will have cut with the "A" Mill of the above improvement and a single saw, 20,000 ft. of inch boards in twelve consecutive hours. If the party accepting the bet proves the winner, we pledge ourselves to present him with the Mill employed in the trial. Who is disposed to test our sincerity? Pamphlets furnished. Address
17-ps WINTER & CO., 50 Broadway, New York.

CONSOLIDATED LINE.
Great Through Route
TO
THE MINING REGION
AND
THE PACIFIC STATES.
The Holladay Overland Mail
AND
EXPRESS COMPANY.
having consolidated the property of the "OVERLAND STAGE LINE" and the "OVERLAND DESPATCH COMPANY"—comprising all the Overland stage lines running west from the Missouri river—and largely increased and improved their stock and coaches and reduced their rate of fares nearly 25 per cent, will run a
Daily Line of Coaches
to all the principal points in the gold mines of Colorado, Utah, Montana, Idaho, Nevada, California and Oregon.
They are now running daily coaches from TOPEKA, (in connection with the railroad from St. Louis,) via the "Smoky Hill" route; and from ATCHISON, Kansas, (in connection with the Hannibal and St. Joseph Railroad,) and from NEBRASKA CITY and OMAHA, via DENVER CITY, Colorado, to SALT LAKE CITY, in Utah; thence connecting with their line of coaches for Virginia City and Helena, in Montana; Boise City in Idaho; Walla-Walla, Dalles City and Portland, Oregon.
At Denver City, Colorado, connecting with their double daily line of coaches for Central City, Blackhawk and Empire City.
Passengers for New-Mexico and Arizona also connect at Denver, with a tri-weekly line of coaches for Fort Union, Taos, Santa Fe and other points in those territories.
Passengers for Nevada and California connect at Salt Lake City with daily coaches for Austin, Reese River, Virginia City, Nevada Humboldt and San Francisco, California.
This Company will also, at an early day, run a line of stages from Salt Lake City through the silver mining district of the Parabuagett Valley to Colville, at the head of navigation on the Colorado River.
RATES OF FARE:

Between Topeka, Atchison, Nebraska City, Omaha,	and Denver	$125
Between same points and Salt Lake City		250
Between Denver and Salt Lake City		150
Between Salt Lake City and Boise		125
Between Salt Lake City and Virginia City		125
Through tickets from the Missouri River to Boise and Virginia City		250

TIME:
To Denver City 5 days,
To Salt Lake 9½ days,
To Boise 12½ days,
To Virginia City 13 days,
To San Francisco 16 days.
A treasure and freight express, carried on mail time, in charge of trustworthy and competent messengers, to all of the above named points.
For further information,
Apply at the office of the Company,
No. 35 William street, corner of Exchange place,
New York
BEN. HOLLADAY, President.
W. S. GURNEE, Vice President,
WM. H. FOGG, EUGENE KELLY, S. L. M. BARLOW, } Directors.
GEO. E. COCK, Treasurer.
GEO. K. OTIS, Secretary.

TURNING LATHES.
American Institute 1865 Prize Medal
TURNING LATHES,
For Foot or Steam Power,
MANUFACTURED BY
James Stewart's Son,
AT 252 CANAL STREET, ENTRANCE 107 ELM STREET, N. Y.
ESTABLISHED 1826.
17-ps ADAM STEWART.

CARD.—Professor H. DUSSAUCE, Chemist, lately from the Laboratory of the French Government, will reside in Europe several months. He takes occasion to inform his numerous friends that he is ready to transact any business there in the chemical line, such as buying books and apparatus, machinery, processes, etc., selling chemical patents, etc. For further information addres 13 Avenue Bugeaud, Quartier de Passy, Paris, France.

IMPORTANT AND VALUABLE WORKS
ON MINING, MINERALOGY, GEOLOGY AND METALLURGY.

ANSTED'S Gold Seeker's Manual. 1 vol. 12mo, cloth... $ 1 75

ANTISELL.—The Manufacture of Photogenic or Hydro-Carbon Oils, from Coal and other Bituminous substances, capable of supplying Burning Fluids. By Thomas Antisell, M. D. 1 vol 8vo..... 3 00

BUCKLAND (Rev. Wm.)—Geology and Mineralogy 2 vols. 9vo, hf. cf 20 00
2 cloth. 8 vo, cloth..... 10 00

BLAKE (Wm. P.)—Report of a Geological Reconnoissance in California. 1 vol. 4to, Illst. 10 00

COQUAND.—Traite des Roches. 1 vol. 8vo, hf. mor..... 5 25

DANA'S Manual of Mineralogy. 1 vol. 8vo. 2 25
Text Book of Geology. 1 vol. 12mo..... 2 00

DEGOUSSEE.—Guides des Sondeur et des Sondages. 2 vols. and Atlas, half mor..... 19 50

DUFRENOY.—Mineralogie. 5 vols. 8vo..... 20

FOSTER AND WHITNEY.—Report of the Geology of the Lake Superior Land District. The Iron and Copper Regions. 2 vols. 8vo, and maps (scarce)..... 10

FAIRBAIRN.—Iron: its History, Properties, and Processes of Manufacture. By Wm. Fairbairn, C. E., LL. D. 1 vol. 8vo. New Edition 3 75

FEUTCHWANGER.—A Treatise on Gems. 1 vol. 8vo, cloth..... 1 50

GREENWELL (G. C.)—A Practical Treatise on Mine Engineering. Handsomely illustrated. 1 vol. 4to, hf. mor. 27 50

GOODYEAR'S Translation. A Treatise on the Analysing of Copper, Lead, Silver, Gold and Mercury, from the German of Th. Bodemann and Bruno Kerl. 1 vol. 12mo, cloth. 2 50

HUMBLE.—Dictionary of Geology and Mineralogy. Third Edition. 1 vol. 8vo, cloth..... 3 50

HOSKOLD'S Practical Treatise on Mining Land and Railway Surveying, Engineering, &c. 1 vol. 8vo, cloth. ... 15 00

JACOBS.—Precious Metals. 2 vols. 12mo..... 12 00

KURR'S Mineral Kingdom. 1 vol. 4to, colored plates ... 15 75

KING (C. W.)—Natural History, Ancient and Modern, of Precious Stones and Gems. 1 vol. 8vo, cloth..... 10 50

KUSTEL.—Nevada and California Processes of Silver and Gold Extraction, for general use, and especially for the Mining Public of California and Nevada; also, a description of the General Metallurgy of Silver Ores. By Guido Kustel, Mining Engineer. Illustrated by accurate engravings. 1 vol. 8vo, cloth..... 8 00

LAMBORN.—Rudimental Treatise on the Metallurgy of Copper. 1 vol. 12mo, limp cloth. Illustrated 1 00
—— Rudimentary Treatise on the Metallurgy of Silver and Lead. 1 vol. 12mo, limp cloth. Illustrated 1 00

LONG (Major S. H.) Account of an Expedition from Pittsburgh to the Rocky Mountains, performed in the years 1819 and 1820. Compiled by Edwin James, Botanist and Geologist for the Expedition. 4 vols. 12mo, hf. cf..... 50 00

McCORMICK.—Arizona; its Resources and Prospects. Pamphlet, 32 pp. with map. By R. C. McCormick (secretary of the Territory)..... 00 25

MITCHELL'S Manual of Practical Assaying. 1 vol. 8vo, cloth..... 10 50

MAKINS.—A Manual of Metallurgy, more particularly of the Precious Metals, including the Methods of Assaying them. By G. H. Makins. 1 vol. 12mo, cloth. Illustrated by upwards of 50 engravings..... 3 50

MAP of the "Reese River" Mining District..... 3 00

MULLAN'S Miner's and Traveller's Guide to Oregon, Washington, Idaho, Montana, Wyoming, and Colorado, via the Missouri and Columbia Rivers. 1 vol. 12mo..... 2 00

OVERMAN (Frcd.)—A Treatise on Metallurgy; comprising Mining, and General and Particular Metallurgical Operations. 1 vol. 8vo, cloth..... 8 00
—— The Manufacture of Iron in all its Various Branches; including a description of Wood-cutting, Coal-digging, etc. 1 vol. 8vo, cloth. (Scarce)..... 15 00

PIGGOT.—The Chemistry and Metallurgy of Copper. By A. Snowden Piggot, M. D. 1 vol. 12mo, cloth..... 1 50

PHILLIPS AND DARLINGTON.—Records of Mining and Metallurgy; or, Facts and Memoranda for the use of Mine Agents and Smelters. By J. A. Phillips and John Darlington. 1 vol. 12mo, cloth 2 50

PERCY (John).—Metallurgy; the Art of Extracting Metals from their Ores, and adapting them to various Purposes of Manufacture. Vol. 2, Iron and Steel. 1 vol 8vo, cloth 21 00

SCOFFERN'S Useful Metals and their Alloys. 1 vol., cloth..... 3 75

SOPWITH (T.)—A Treatise on Isometrical Drawing as applicable to Geological and Mining Plans. 1 vol. 8vo, cloth (very scarce)..... 15 00

SWEET S. H.)—Special Report on Coal; showing its Distributions, Classification and Cost, delivered over Different Routes to various Points in the State of New York, and the Principal Cities on the Atlantic Coast. By S. H. Sweet, late Deputy Engineer and Surveyor of the State of New York. Transmitted to the Legislature, March, 1865. 1 vol. 8vo, cloth..... 3 00

TAYLOR.—Statistics of Coal; including Mineral Bituminous Substances employed in the Arts and Manufactures. Second Edition. By R. C. Taylor. 1 vol. 8vo, cloth. ... 6 00

TRURAN (W.)—The Iron Manufacture of Great Britain, Theoretically and Practically considered; including Descriptive Details of the Ores, Fuels, and Fluxes employed, the Preliminary Operation of Calcination, the Blast, Refining, and Puddling Furnaces, Engines, Machinery, etc. Third edition, revised. Illustrated. 1 vol. 4to... 20 00

WHITNEY.—A Geological Survey of California. Report of Field Work, from 1860 to 1864. By J. D. Whitney. 1 vol. quarto. 6 00

WHITNEY (J. D.)- Silver Mining Regions of Colorado. paper..... 00 25

Together with a Large Stock of Engineering and Mechanical Books.

For sale by WESTERN & COMPANY, Office JOURNAL OF MINING, 37 Park Row.
☞Catalogues of Scientific works sent post-paid on application.

NEW YORK ROCK DRILL COMPANY.

OFFICE, 137 BROADWAY.

GEN. E. M. BARNUM, PRESIDENT, . . . G. A. GARDNER, SECRETARY.

This company are prepared to fill orders for Drilling Machines for all kinds of Rock work, for outside work, and for Mining.
The Machines now offered for sale are :

No. 1 Hand machine for ONE man, weighing 100 lbs., with 3 drills, complete,.....$ 200 00
No. 2, " TWO " 125 " " 250 00
No. 3, 1 horse power Machine, weighing 150 lbs., with 8 ft. steam hose, 3 drills, complete, 450 00
No. 4, 2 " " " 250 " " " " " 850 00
No. 5, Machine for VERTICAL drilling, *without engine*, to drill holes 4 to 6 inches diameter, with timber frame on wheels, &c.....$1,000 00
No. 6, Machine (entirely of iron), drilling at any angle holes 4 to 8 inches diameter, with *nominal* 4 horse power engine (on truck, and moved by own engine), $2,500 to 3,000 00

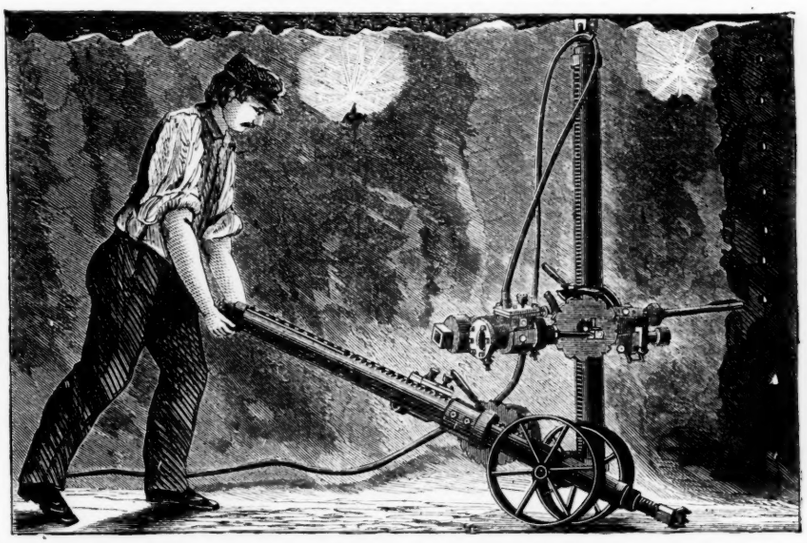
These are the only machines that have done regular work in this Country, and are the most Simple, Compact and Economical. We invite the closest scrutiny. A full sized Mining Drill can be seen daily, drilling into a block of Rockport (Mass.) Granite, the hardest Granite known, at the Machine Shop of STERLING & KERR, No. 344 and 346 West 24th street, West of 10th avenue.

GARDNER'S PATENT ROCK DRILLING MACHINE FOR MINING PURPOSES.

DRIVEN BY STEAM OR COMPRESSED AIR. G. A. GARDNER, PATENTEE, NEW YORK.

Certificate.

NEW YORK, March 25, 1866.
MR. G. A. GARDNER, Sec'y N. Y. Rock Drill Co.:
SIR—After witnessing the operation of your Rock Drilling Engines on several occasions, . . . I am satisfied that they are capable of boring much faster than by HAND in any kind of rock, and will operate with about equal efficiency at any angle in a vertical or horizontal plane; that they can work in confined spaces, such as shafts and drifts of mines, railroad tunnels, etc., etc.; that several drills can be used where only one could be operated by hand labor. These Machines may be driven by compressed air. It appears to me highly probable that the time required to open mines by machinery may not be more than one-fourth of that which is now required.
The advantages resulting from such a reduction of the time can hardly be over estimated.
Very respectfully,
GEO. D. EMERSON, Mine Engineer,
Late of Lake Superior, Mich.



Certificate.

No. 95 Liberty street, }
NEW YORK, March 23, 1866. }
MR. G. A. GARDNER, Secretary N. Y. Rock Drill Co.
DEAR SIR: Respecting the "Gardner Drill," I would say, we used it with perfect success on the Niagara Falls Canal. When we first worked it, we drilled to the average depth of 10 feet in the solid limestone, holes of the diameter of six inches, at the rate of eighteen inches deep, in twenty minutes.
We used it for several months on the regular work, and found it more economical and effective than any other drill we have ever used. The rock is the hardest kind of blue limestone, with occasional boulders of quartz imbedded in it. You are at liberty to refer parties to me who may desire more particulars.
S. M. ALLEN,
Late President of Niagara Falls Water Power Company.

☞ This cut represents a section of a mining tunnel, or *drift*, 6x4½ feet, with two Drilling Engines; one driven by *compressed air*, drilling horizontal holes, the other being moved by the Engineer to its position on a pair of wheels *temporarily* attached to its supporting column; three of these columns, with two machines on each, may be worked in a drift of this size, producing as much working effect as fully seventy-five men. A drift of this size through solid rock (Granite for example) can be thus driven ten lineal feet every 24 hours. ☜

These machines are very compact, measuring—independent of supporting column, etc.—30 inches in length by 12 inches breadth and depth, and weighing only 250 lbs. One man can move and adjust them to the work. The supporting column is held firmly in place by setting out the jack-screw, thus bracing it between the top and bottom of tunnel, or the sides of shaft, and the machines are raised and lowered by a gear working in the rack on side of column, while the attachments to the column form a *universal joint* and allow the machines to work *at any angle*. They are automatic; one engineer can attend to a gang of four or six, working on the same face. Six of them can be worked in a heading four and a half by six feet; and in a shaft six by twelve feet, eight of them can be worked at once. In a railroad, or other large tunnel, an increased number of machines can be operated, being supported and moved upon a carriage running on rails. The blow is struck by the drill being projected by the reactive force of an india rubber spring, against the rock, the drill being as free from the working machinery at the instant of striking, as an arrow shot from a bow; 300 blows per minute can be given with the utmost force the steel-drill point can bear. The cross-head to which the drill is attached is drawn back; (thus compressing the spring) by a cam rotated directly by the piston rod of an oscillating cylinder, the drill point has an automatic turning motion, and the entire machine an automatic feed, *self-regulating*, according to the varying hardness of the rock; the machine working equally well with the same adjustment when drilling on flint, or on granite cutting two inches deep per minute, or on micaslate, sandstone, or other softer rocks, cutting four and six inches per minute. They drill equally well at any angle, and with them holes can be put in the most difficult places with great facility.
Machines for open cuts have been worked for several years on railroad and canal excavations, operated by four-horse engines drilling four, six and eight inch diameter holes, and doing the work of fifty men. Rock-Drilling can be done with these machines for one-tenth the cost of hand labor, and in one-tenth the time. We are prepared to furnish machines with *gangs of drills* for splitting granite, marble, etc.; *channelling machines* for marble, etc., when blasting is to be avoided; also machines for cutting the "BEARING IN" in Bituminous Coal Mines: we also manufacture the GARDNER PATENT DRILL POINTS, especially desirable for sinking oil wells; making round holes, requiring no reaming, and cutting faster than any other point. 2-tf

---

GROVESTEEN & CO.,
PIANO-FORTE MANUFACTURERS,
499 BROADWAY, NEW YORK.
These Pianos received the Highest Reward of Merit at the World's Fair, over the best makers from London, Paris, Germany, the cities of New York, Philadelphia, Baltimore and Boston; also, the GOLD MEDAL at the American Institute, for FIVE SUCCESSIVE YEARS! Our Pianos contain the French Grand Action, Harp Pedal, Overstrung Bass, Full Iron Frame, and all Modern Improvements. Every Instrument WARRANTED FIVE YEARS. Made under the supervision of MR. J. H. GROVESTEEN, who has a practical experience of over thirty-five years, and is the maker of over eleven thousand pianofortes. Our facilities for manufacturing enable us to sell these instruments from $100 to $200 cheaper than any first-class piano-forte. 19-qp

THE HORACE WATERS GRAND, SQUARE and UPRIGHT PIANOS, MELODEONS and CABINET ORGANS, wholesale and retail. To let, and rent allowed if purchased. Monthly payments received for the same. Second-hand pianos at bargains, from $60 to $225. Factory and Warerooms, 481 BROADWAY. Cash paid for second-hand pianos. Pianos tuned and repaired. Sheet Music, a little soiled, at 1½ cents per page.
71-x3 HORACE WATERS.

KEROSENE AND GAS STOVES,
Tea and Coffee Boilers, Glue Pots, Oil Cans,
&c., &c., &c.
All the cooking for a family may be done with Kerosene Oil, or Gas, with less trouble, and at less expense, than by any other fuel. Each article manufactured by this Company is guaranteed to perform all that is claimed for it. Send for Circular. Liberal discount to the trade.
KEROSENE LAMP HEATER CO.,
19-a 206 PEARL STREET, N. Y.

EMPIRE SEWING MACHINE CO.
Principal Office, 616 Broadway, N. Y.
GREAT IMPROVEMENT
in Sewing Machines. Empire Shuttle. Crank Motion Sewing Machines. It is thus rendered noiseless in action. Its motion being all positive, it is not liable to get out of order.
IT IS THE BEST FAMILY MACHINE.
Notice is called to our NEW and IMPROVED Manufacturing Machine for Tailors and Boot and Shoe Fitters.
Agents wanted, to whom a liberal discount will be given. No consignments made.
EMPIRE SEWING MACHINE CO.,
6 qp 616 Broadway, N. Y.

IMPORTANT TO MINERS.

Every description of Analysis and Assays carefully attended to, and returns promptly made, by
WESTERN & COMPANY,
No. 37 Park Row, and 145 Nassau St., New York City.
P. O., Box 5,969.

CANVASSERS WANTED.—CANVASSERS WANTED in every city, town and village, for the AMERICAN JOURNAL OF MINING. Extra inducements offered to energetic, faithful men. Specimen copies furnished free of charge. Address
WESTERN & COMPANY, 37 Park Row, New York.

JO PRINTING.
Plans, Specifications, Bill-Heads, Receipts Letter-Heads, Show-Bills, Cards, Circulars, etc. etc.,
Executed at the office of the AMERICAN JOURNAL OF MINING.
WESTERN & COMPANY,
№ 37 Park Row, and 145 Nassau St., New York City.
P. O. Box 5,969

A DECIDED IMPROVEMENT.

The Dial CANCELLING STAMP,
Self-Inking. Self-Adjusting. for days and months. Simple. Durable and Reliable. Only one form of Die is used, as per sample (oval shape). I also furnish, at the Manufacturers' prices, every variety of Hand Stamps and Seal Presses manufactured in the United States. JAMES DAMMERS, 195 Broadway, New York. 18-ps

To Inventors and Others.

The proprietors of the AMERICAN JOURNAL OF MINING have, connected with their establishment, Artists of experience and skill in
DESIGNING,
WOOD-ENGRAVING, and
LITHOGRAPHY.
Machinery, Buildings, Landscapes, etc., Designed and Engraved or Lithographed from a photograph or a plain comprehensive sketch, or from the object itself. Specimens of work ready for inspection. Terms moderate.
Inventors desirous of applying for Patents on their own account can have drawings for the Patent Office carefully and accurately executed,
AT VERY MODERATE RATES

FIRE-PROOF
IRON TANK
STORAGE COMPANY,
TRANSFER OFFICE, - - - 38 BROAD STREET,
14-9p NEW YORK.

GOOD INVESTMENT.
CAPITAL WANTED to work several thousand feet of GOOD GOLD QUARTZ LODES, situated in BOULDER COUNTY, COLORADO, ten miles from a farming district and sixteen from Coal Beds, several open to pay, and roads thereto. Water-power and timber near; use of my Patent to work these ores Free. Titles perfect, and specimens can be seen at the office of the JOURNAL OF MINING. For particulars address or call on the locator, No. 99 Bond street, Cleveland, Ohio.
23-i J. A. HITCHINGS.

OIL LANDS FOR SALE.
Thirteen Thousand Acres of Land,
in the Canada Oil Regions, in the Townships of Enniskillen, Dawn, Zone, Moore, Brooke and Sombra, for sale or to lease, for Oil purposes, in portions to suit purchasers.
For terms and particulars apply to the proprietor.
4-qp T. D. LEDYARD, 74 Yonge Street, Toronto.

SCHOOL OF MINES, COLUMBIA COLLEGE,

EAST 49th STREET, NEW YORK.

FACULTY:

F. A. P. BARNARD, S.T.D., LL.D., President.
T. EGLESTON, Jr., E. M., Mineralogy and Metallurgy.
FRANCIS L. VINTON, E. M., Mining Engineering.
C. F. CHANDLER, Ph. D., Analytical and Applied Chemistry and Geology.
JOHN TORREY, M.D., LL.D., Botany.
CHARLES A. JOY, Ph. D., General Chemistry.
WILLIAM G. PECK, LL.D., Mining Surveying.
JOHN H. VAN AMRINGE, A.M., Mathematics.
OGDEN N. ROOD, A.M., Mechanics and Physics.

The plan of this School embraces a three years' course for the degree of ENGINEER OF MINES, or BACHELOR OF PHILOSOPHY

For admission, candidates for a degree must pass an examination in Arithmetic, Algebra, Geometry and Plain Trigonometry. Persons not candidates for degrees are admitted without examination, and may pursue any or all of the subjects taught. The next session begins October 1, 1866. The examination for admission will be held on June 25, 26, and September 28, 29. For further information, and for catalogues, apply to

3-qp DR. C. F. CHANDLER, Dean of the Faculty.

TAYLOR & SCOTT,

Mining Engineers and Surveyors,

48 PINE STREET, NEW YORK,

Will examine and report upon Copper, Lead, Coal, and other Mines; furnish Plans, and, if not at too great a distance from the city, will undertake the management of the same. Surveying of every description attended to.

REFERENCES: Prof. A. A. Hayes, Boston; Gen. A. E. Burnside, Providence, R. I.; S. L. French, Esq., Boston; N. H. S. Lead Co., New York; Black River Mining Co., Boston; H. Williams, Esq., M. E., Canada; Lionel Brough, Esq., Gov. Ins. Mines, London, Eng.; New Hampshire Silver Lead Co., New York; St. Flavien Mining Co.; R. C. Hawkins, Esq., New York and Boston, and others. 1-xm

OFFICE OF

MAYNARD & TIEMANN,

Mining Engineers and Consulting Chemists,

240 PEARL ST., N. Y., AND CENTRAL CITY, COLORADO.

Assays of Gold and Silver, Analyses of Ores, Minerals, Furnace products, Guano, Soda Ash, &c., &c.

Special attention given to the Analysis of Iron Ores, Iron Slag and Iron Cinder. 17xm

DESULPHURIZING PROCESS.

Patented by B. Keith, A. Baur and N. S Keith,

SEPTEMBER 9TH, 1862.

Parties desirous of procuring the right to use the process, and INFORMATION OF THE LATEST AND MOST IMPROVED MACHINERY FOR REDUCING ORE,

Can apply to B. KEITH, 41 Liberty Street, New York.
Or to
24 ps A. BEHR & N. S. KEITH, Black Hawk, Colorado.

TO THE MINING PUBLIC.—THE SUBscribers are now prepared to receive either Gold or Silver Ores, by the Ton or smaller quantity, and make a fair working test of same, and respectfully invite all who are interested in Minerals to call and examine their process for extracting the Precious Metals. They are also prepared to make the usual Fire Assay

Our Works are at the foot of North Third Street, Brooklyn, E. D. They can be reached either by Grand Street Ferry, or by Greenpoint cars, which pass the door.

CHARGES.

Testing	1 lb. of Ore	$3 00
"	5 "	5 00
"	10 "	7 00
"	50 "	10 00
"	100 "	15 00
"	1 ton "	25 00

FIRE ASSAYS.

Gold and Silver combined		$5 00
" "	separate	7 00

11-ps BARBER & WYCKOFF.

WM. D. ANDREWS & BRO.,

414 WATER STREET, NEW YORK,

Manufacturers of Andrews' Patent

Oscillating Engines,

CENTRIFUGAL PUMPS, AND TUBULAR BOILERS.

Our ENGINES occupy little room, are light, simple, cheap, and economical, require no special foundation or balance-wheel pit, and can be run from **150** to **500** revolutions per minute with Safety. Sizes from **1-2** Horse to **250** Horse-Power.

Our CENTRIFUGAL PUMPS pass mud, sand, coal, corn, gravel, etc., without injury, and use little power. Sizes from **90** Gallons to **40,000** Gallons per minute capacity. For sewers, canals, coffer dams, condensers, irrigation, and wrecking, they are unequaled.

Our BOILERS are light, strong, and portable, are economical of fuel, burn Wood, Hard or Soft Coal, and CONSUME THE SMOKE. Sizes from **2** to **50** Horse-Power.

Awarded First Premiums at the recent Fair of the American Institute—a gold medal to each.

Portables from **2** to **20** Horse-Power. Send for descriptive pamphlets and price-lists. 23-a

LABORATORY OF INDUSTRIAL CHEMISTRY,

DIRECTED BY

Prof. H. Dussauce, Chemist.

Advices and consultations on chemistry, applied to arts and manufactures, agriculture, metallurgy, etc.; plans of factories, drawings of apparatus. He can furnish the most recent improvements in chemical fabrications, such as chemical products, petroleum soaps, candles, colors of lead and zinc, varnishes, ceramic glass, wines, liquors, vinegars, matches, inks, dyeing and calico printing, perfumery, colors of coal tar, tanning, etc., etc.

While in Europe he will buy process for parties, and sell chemical or other patents, if desired. He will give all necessary information to exhibitors to the great Exhibition.

Address 13 Avenue Bugeaud,
Quartier de Passy,
Paris, France.

PORTABLE STEAM ENGINES.

Brayton's Safety Steam Generator and Engine.

A PERFECT SUCCESS.

By this invention the long sought-for object has been accomplished, to wit: A means by which Steam can be Generated Safely, so that there shall be no more danger from explosion than with the hot-air engine, and at the same time retain all the power of the steam engine. This much sought-for result has at last been accomplished, and after many severe tests we feel fully warranted in offering this Steam Generator and Engine to the public as a perfectly safe power, and at the same time a cheap power. As a generator of steam for heating buildings, etc., there is not its equal in use.

For further information, or circular, address

R. A. HUTCHINSON, Agent.
21ps No. 8 Dey Street, New York.

INCRUSTATION OF

STEAM BOILERS.

This greatest of evils in the use of steam is entirely prevented by the "Anti-Incrustation Powder" of

H. P. Winans, 11 Wall Street, New York.

INVENTED AND INTRODUCED IN 1855.

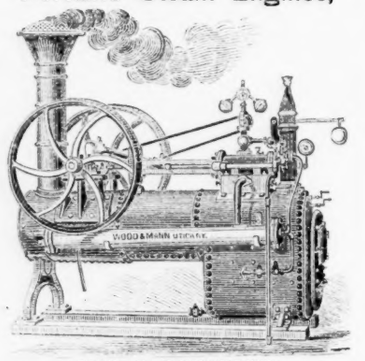
now ten years in successful operation in over 6,000 boilers, without injury, and saving many times its cost in fuel and repairs.

A clean boiler generates steam more freely, and will outlast ten dirty or incrusted ones. 14-ps

WOOD & MANN STEAM ENGINE CO.'S

CELEBRATED

Portable Steam Engines,



FROM 4 TO 35 HORSE POWER.

Also, Portable Saw Mills.

We have the oldest, largest and most complete works in the United States, devoted exclusively to the manufacture of Portable Engines and Saw Mills, which, for simplicity, compactness, power and economy of fuel, are conceded by experts to be superior to any ever offered to the public.

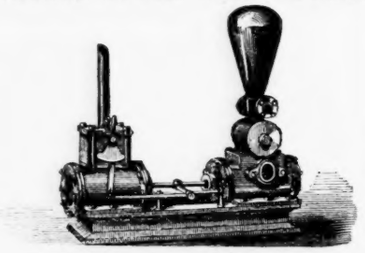
The great amount of boiler room, fire surface and cylinder area which we give to the rated horse power, make our Engines the most powerful and cheapest in use; and they are adapted to every purpose where power is required.

All sizes constantly on hand, or furnished on short notice.

Descriptive circulars, with price list, sent on application.

WOOD & MANN STEAM ENGINE CO., Utica, N. Y.,
12-qp Branch Office, 96 Maiden Lane, New York City.

NIAGARA STEAM PUMP WORKS.



CAMPBELL & HARDICK BROS.,
No. 9 ADAMS STREET,
BROOKLYN.
Send for circular 20xm

STEAM PUMPS.

Guild & Garrison,
ENGINEERS AND MACHINISTS,

MANUFACTURERS OF

Steam Pumps, Steam Engines, Vacuum Pans,

and all the necessary connections. The Steam Pumps are of the following class, namely:

EXCELSIOR,	AIR VACUUM,
BALANCE WHEEL,	DOUBLE PLUNGER,
DUPLEX.	WATER PROPELLOR.

and a number of other plans adopted for different purposes. These Pumps are suitable for all the various kinds of Pumping. Manufactured and for sale at the

STEAM PUMP WORKS, 55 & 57 FIRST STREET.

(on same block with the Grand and Roosevelt street Ferry Landing.) WILLIAMSBURGH, NEW YORK. 16-qp

STEAM PUMPS.

A. S. CAMERON & CO.,

22ND STREET, CORNER OF 2ND AVENUE, N. Y.

HAVE ONE HUNDRED AND FORTY patterns to select from, arranged to order for pumping

WATER, ACID,
AIR, LIQUOR,
OIL, SYRUP,
MASH, &c.

Pumps guaranteed in the most difficult situations. We refer to any first class machine shop in the United States.

Parties are hereby cautioned against using Steam Pumps arranged to work by hand in violation of our original and re-issued Letters Patent, covering this feature. 22-xm

STEAM PUMPS.

The Woodward Steam Pump Manufacturing Company,

MANUFACTURERS OF THE

WOODWARD PATENT IMPROVED SAFETY STEAM PUMP, FOR MINING PURPOSES AND AS A FIRE ENGINE,

Also,

STEAM, WATER AND GAS FITTINGS OF ALL KINDS.

Also, Wholesale and Retail Dealers in WROUGHT IRON PIPE, BOILER TUBES, etc.

WOODWARD BUILDINGS, Nos. 76 & 78 CENTRE ST.
NEW YORK.
Corner of Worth Street, formerly of No. 77 Beekman Street.

GEO. M. WOODWARD,
21xm President.

HYDRAULIC WORKS,

MANUFACTORY,

BROOKLYN, N. Y.

Steam Pumping Engines, Single and Duplex, Worthington's Patent, for all purposes, such as Water Works Engines, Condensing or Non-condensing; Air and Circulating Pumps, for Marine Engines; Air Pressure Pumps; Blowing Engines; Vacuum Pumps; Stationary and Portable Steam Fire Engines; Boiler Feed Pumps; Wrecking Pumps;

Mining Pumps,

Water Meters, Oil Meters; Water Pressure Engines; Stamp Mills for Gold, Silver and Copper Ore; Eaton's Patent Amalgamators for Gold and Silver; Steam and Gas Pipe, Valves, Fittings, &c.; Iron and Brass Castings.

☞ Send for Circular.

H. R. WORTHINGTON,
19-xm 61 Beekman street, New York

J. CLAYTON'S

Patent Steam Pumps,

HAND PUMP, & STEAM ENGINE COMBINED.

These pumps contain every desirable quality in a steam pump, are made of the best material, and in the best manner, and are the cheapest first-class pumps in the market. For cut and description see JOURNAL OF MINING, No. 18, Vol. I. Please send for circular.

PRICE LIST.

No.	Diameter of Steam Cyl. inder.	Diameter of Water Cyl. inder.	No. Revolutions.	No. Gallons discharged per minute.	Length of Stroke.	PRICE.
No. 0	2½ in.	1¼ in.	200	4	4	$130 00
" 1	4 "	2 "	180	20	5	200 00
" 2	5 "	2½ "	160	45	6	275 00
" 3	7 "	3½ "	140	85	7	375 00
" 4	9 "	5 "	110	150	8	525 00
" 5	12 "	7 "	90	275	8	625 00

Other sizes of pumps made to order at the shortest notice.
18ps JAMES CLAYTON, 102 Front street, Brooklyn, N. Y.

THE ERICSSON

CALORIC ENGINES,

FOR

PUMPING & HOISTING IN MINES.

PORTABLE ENGINES,

HOISTING GEAR, PUMPS, Etc.

☞ Jobbing Done. ☜

JAMES A. ROBINSON,

164 DUANE STREET, (CORNER HUDSON,)

New York.

11-ps

PORTABLE STEAM ENGINES,

COMBINING THE MAXIMUM OF

Efficiency, Durability and Economy,

with the minimum of weight and price. They are widely and favorably known, more than SIX HUNDRED being in use. All warranted satisfactory, or no sale. Descriptive circulars sent on application. Address J. C. HOADLEY & Co.,
psi-20 Lawrence, Mass.